DOCUMENT RESUME

ED 409 888 IR 018 514

AUTHOR	Stout, Connie
TITLE	Networks for Goals 2000 Reform: Bringing the Internet to K-12 Schools. July 25-September 30, 1994.
INSTITUTION	Southwest Educational Development Lab., Austin, Tex.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	95
NOTE	283p.
CONTRACT	RP91002003
PUB TYPE	Reports - Evaluative (142)
EDRS PRICE	MF01/PC12 Plus Postage.
DESCRIPTORS	Access to Information; *Computer Networks; Educational Finance; *Elementary Secondary Education; Internet; *National Surveys; *Public Schools; *Telecommunications
IDENTIFIERS	Access to Computers; Barriers to Implementation; Goals 2000; *Technology Integration; *Texas Education Network

ABSTRACT

This report summarizes the findings and presents data from a nationwide survey conducted by the Texas Education Network (TENET) from July 25 to September 30, 1994. In response to a TENET questionnaire, representatives from 46 of the 50 states, Puerto Rico, and the U.S. Bureau of Indian Affairs reported on the status of telecommunications networks for K-12 public schools in their areas at the time of the survey. The report begins with an analysis of survey responses, and is followed by 52 state profiles describing computer telecommunications in the schools. Findings include: (1) by October 1, 1994, the majority of states had implemented or were preparing to implement public telecommunications networks, with 38% of respondents describing state networking efforts as "operational" or "partially operational"; (2) K-12 schools were just beginning to adopt telecommunications network technologies; (3) state officials recognized the need for telecommunications technology for education and had begun planning for it; (4) funding was the most daunting and problematic of 8 potential barriers to school networks; (5) lack of equity in public access to networked technology, lack of skilled personnel, widely scattered communities, and inadequate and outdated technology were identified as other obstacles to K-12 networks; (6) 19 states reported that funding for educational networks was available from local, district, state, and "other" sources; and (7) private sector support may influence public sector adoption of telecommunications. Appendices include state listings of public officials responsible for educational networking and major network and Internet service providers, and the TENET questionnaire. (Author/SWC)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 409 888

Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☐ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

- Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Networks *for* Goals 2000 Reform

Bringing the Internet *to* K-12 Schools

July 25–September 30, 1994

Texas Education Network

IR018514

SEDL

Southwest Educational Development Laboratory

"PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

D. Wilson

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)."

BEST COPY AVAILABLE

Networks *for* **Goals 2000 Reform**

Bringing the **Internet** *to* **K-12 Schools**

July 25–September 30, 1994

Connie Stout, Director
Texas Education Network

SEDL
Southwest Educational
Development Laboratory

Acknowledgments

Thanks and recognition are due to the many people who contributed to this publication: Mimi Mayer, David Foster, Dave Wilson, Lori Womack, Sandra Rios, Clee Quick, Elena Mercado, and Michael Longmire of the Southwest Educational Development Laboratory, Austin, Texas; Connie Stout, Wanda Jackson, Gayle Gaston, and Kelly Fenton of the Texas Education Network, Austin; Jane Thurmond of Tree Studio, graphic design, Austin; and the survey respondents who provided accurate and honest descriptions and evaluations of K-12 computer networks in their states.

Copyright © 1995
Southwest Educational Development Laboratory

This publication is based on work sponsored wholly, or in part, by the Office of Educational Research and Improvement, U.S. Department of Education under contract number RP91002003. The content of this publication does not necessarily reflect the views of OERI, the Department, or any other agency of the U.S. Government.

Printed in U.S.A.

Networks *for* Goals 2000 Reform

Bringing the Internet *to* K-12 Schools

July 25–September 30, 1994

Connie Stout, Director

Texas Education Network

This report summarizes the findings and presents data from a nationwide survey conducted by the Texas Education Network (TENET) from July 25 to September 30, 1994. In response to a TENET questionnaire, representatives from 46 of the 50 states, Puerto Rico, and the U.S. Bureau of Indian Affairs reported on the status of telecommunications networks for K-12 public schools in their areas at the time of the survey.

Copyright © 1995
Southwest Educational
Development Laboratory
211 East Seventh Street
Austin, Texas 78701-3281
(512) 476-6861

BEST COPY AVAILABLE

This report begins with an analysis of survey responses. There follow 52 state profiles describing computer telecommunications in the schools as reported by survey respondents. The report concludes with state listings of public officials responsible for educational networking as well as network and Internet service suppliers.

Findings

- By October 1, 1994, the great majority of states had implemented or were preparing to implement public telecommunications networks. Thirty-eight (79%) of the respondents described networking efforts within their state as "operational" or "partially operational." Public information networks were slowly becoming a standard feature on the American landscape.
- K-12 schools were just beginning to adopt telecommunications network technologies when surveyed. Seventeen (35%) of the respondents listed Internet addresses for Gopher or Mosaic servers in K-12 schools or school systems in their states. While network technology had begun reaching K-12 schools, it had been deployed more commonly for other public services.
- States officials recognized the need for telecommunications technology for education and had begun planning for it. Forty-one of responding states had developed or were developing formal technology plans for school telecommunications networks when surveyed.
- *Funding* emerged as the most daunting and problematic of eight potential barriers to school networks. Fifty-six percent of the respondents rated *Funding* as a problem, creating a unique and striking consensus. Other barriers drawing strong ratings as problems were *Technical Infrastructure* (29%) and *Legislative Actions* (25%).
- Respondents voluntarily identified other obstacles to K-12 networks, including:
  - Lack of equity in public access to network technologies.
  - Lack of skilled personnel to deploy and service school networks.
  - Widely scattered communities that would be expensive to link with costly fiber networks.
  - Inadequate and outdated technology in local, rural telephone companies.
- Nineteen states reported funding for educational networks was available from local district, state, and "other" sources. States that maximized their funding opportunities were, predictably, less apt to rate *Funding* as a problem.
- Federal sources were the most frequently cited form of "other" funding for K-12 networks. Across the nation a wide variety of funding strategies were in use, such as specialized tariffs or tiered pricing. No one method predominated.
- A major service provider had established a program encouraging infrastructure development in 30 states. Private sector support may influence public sector adoption of telecommunications.

PREFACE

In the interval since this study was conducted as part of the State Networking Project, computer networking has continued to advance with astonishing rapidity. A recent QED (Quality Education Data) study revealed that, in the past year, use of computer networks in schools has grown by 64 percent. During 1994, Gopher traffic increased by 197 percent and use of the World Wide Web, by a staggering 1,713 percent, according to the Merit Network, a supplier of Internet services.

All of which spotlights the importance, if not the necessity, of linking public K-12 classrooms to the Internet and other computer telecommunications networks. Not only has technology evolved and connectivity increased, but the sheer quantity of valuable educational resources the networks can deliver has been compounded exponentially. Clearly, it is urgent that all American students get Internet tools placed into their hands.

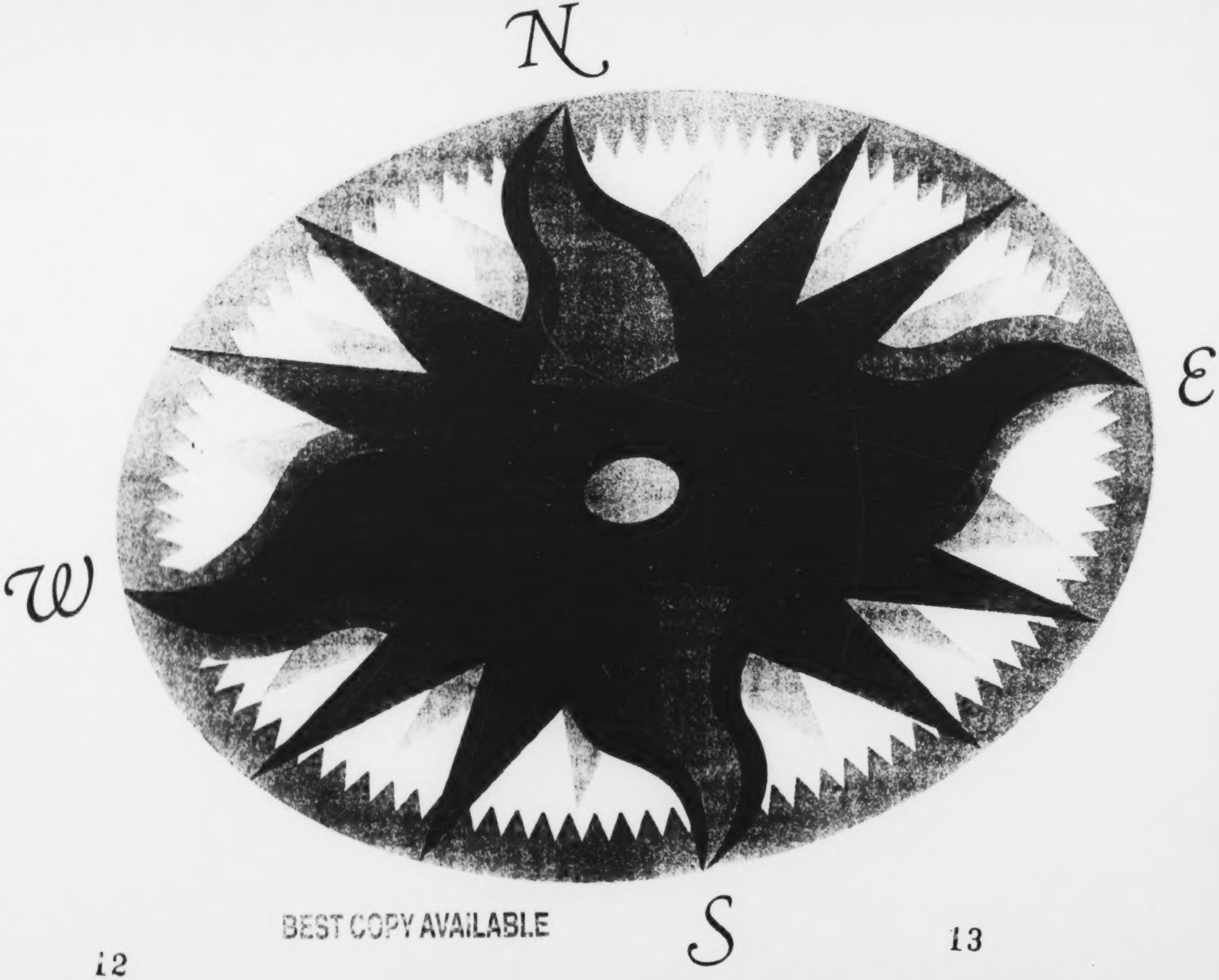
But delivering those tools is a monumental task, as the State Networking Project demonstrates. It is true, survey data are accurate only for a specific and brief time period. The obvious facts reported here are temporal. Yet this drawback is overcome when one considers a more salient point: the problems facing public officials who assessed educational networks in their states are shared and persistent.

What problems are these? Infrastructure building. Regulatory actions. Most intimidating of all is the problem of funding school networks. More than half of our respondents rated funding as a problem for state and local education agencies. And infrastructure development, regulatory environment, and, above all, funding are the unchanging issues underpinning the short-lived statistics gathered here.

Perhaps it's tempting to dismiss these observations as the usual complaint of educators: they always want more money and, seemingly, never have enough. But to do so would be a disservice not only to educators but to the first grade girl hungry to explore the lost world of dinosaurs on the Internet. The fourth grade class swapping observations on acid rain with counterparts in Central America. The farmboy studying Russian in a distance-learning classroom. These children and youths should be beneficiaries of burgeoning network resources. They will not be—until decisionmakers shape policies guaranteeing every student equal access to these educational tools.

Yes, it will be costly to link schools to flourishing information networks. But the evidence argues we may pay a greater price if we do not help children become literate users of technology. We hope the information here will shed light on the extent of this issue.

Connie Stout, Director
Texas Education Network



BEST COPY AVAILABLE

TABLE OF CONTENTS

I. Networks for Goals 2000 Reform

Introduction 1

Project Summary 2

Data Analysis Methods 4

Fall 1994: Networking Reaches K-12 Schools 5

Technology Plans in Educational Networks 8

Funding: The Dominant Barrier to K-12 Telecommunications 10

Funding K-12 Networks: Sources, Strategies, and Concerns 14

Barriers to K-12 Telecommunications 16

II. State Profiles 17

III. Appendices

Persons Responsible for Setting Up K-12 Networks by State 127

Major Network Service Providers for K-12 Education by State 128

Major Internet Service Providers for K-12 Education by State 131

State Networking Project Questionnaire 136

Networks *for* **Goals 2000 Reform**

Bringing the **Internet** *to* **K-12 Schools**

July 25–September 30, 1994

Consider this document a snapshot of a moment in American education. The moment is July through September 1994. The subject of the photo is American public elementary and secondary schools—and their readiness and ability to use a powerful and increasingly influential tool: the National Information Infrastructure (NII), known popularly as the Internet or the information superhighway.

The report speaks directly to the challenge Vice President Al Gore issued to the National Education Association on April 8, 1994:

> ...it makes sense now to build networks of information superhighways that can convey large amounts of information and take them right to the classroom. Our administration has called upon the industries involved and set as a national goal the linking of every public classroom in America to this information superhighway by the turn of the century. We believe that it can be done. And there are many hopeful signs that it is now in the process of being done.[1]

But how close are America's school systems to achieving this goal? This report attempts to measure the distance between current achievements and future goals. It also attempts to map the emerging course of the information superhighway for public schools, kindergarten-to-twelfth grade. Finally, the report spotlights some potential obstacles that may block the development of the information highway as it reaches toward American educators and their students.

[illegible]

BEST COPY AVAILABLE

I. Networks for Goals 2000 Reform

Project Summary

Providing information superhighway links to every public school—much less each classroom—in the United States by the year 2000 is a visionary challenge. Helping to pave the way, the National Science Foundation, the U.S. Department of Commerce, and the U.S. Department of Education funded a task force led by The University of Texas at Austin Computation Center and the Texas Education Network (TENET). Calling itself the State Networking Project, the task force provided a meeting place for leaders with dual expertise in technology and education from all 50 states, the U.S. Bureau of Indian Affairs, and the Commonwealth of Puerto Rico.

TENET staff marshaled State Networking Project participants by requesting that each state department of education identify the staff person designated as responsible for telecommunications networking. This person in turn identified the network service provider(s) in their state. Representatives of federal, state, and local governments were identified as additional network partners as well.

Task force members were asked to assess the status of telecommunications networking in their states' elementary and secondary schools—and to identify network implementation strategies guaranteeing equal access to these technologies for every public school pupil in the country. They shared their understanding and experience in on-line discussions, at a national workshop held in September 1994, and in a survey that described the status of educational telecommunications networks in their home state from late summer to early fall 1994.

Responses to this survey are recorded and synthesized here. The questionnaires were developed and distributed by TENET staff in late July 1994; respondents returned them no later than October 1. This report, therefore, describes the conditions of educational networks for a specific time period. Data appearing here were reported by task force members from 46 states, the Bureau of Indian Affairs, and Puerto Rico; unfortunately, responses from Delaware, Mississippi, Oklahoma, and Virginia became available too late to appear in the following comparative analysis of survey responses.[1]

The survey's 26 questions spanned five broad categories:

- Statistical and quantitative data specific to each state. What are the state's headcounts of teachers, students, campuses, and districts? What are student headcounts in the most and least populated districts? How many districts serve 1,000 or fewer students?
- The status of the state's telecommunications networking projects, with measures of that status. Are the state's networking efforts "operational," "partially operational," "planned," "proposed," or currently nonexistent? What depth and variety of state public information is available on-line? Do any community and freenet enterprises serve state residents, and do they cooperate with public education?
- The role of telecommunications networks in state plans. To what degree has telecommunications networking been incorporated, first, into the broader technology plans of the state and, second, into state plans for its public schools? Has a state Goals 2000 committee been appointed to promote school reform? Does it include a telecommunications representative?
- Funding of state telecommunications networks. How is the state paying for its telecommunications networks? What funding sources are available to schools specifically for network service deployment and services? Have any service providers established programs to encourage infrastructure building? Has the state utility commission ordered special tariffs for K-12 education? Beside state and local district monies, what funding sources are available to pay for educational networks?
- Barriers to telecommunications. How do states rate eight potential barriers to telecommunications networking? What hurdles unique to the state's geography and population distribution must be overcome before the Internet is accessible to every child attending its public schools? What other obstacles could delay or restrain each state in establishing universal educational networks?

Findings from these inquiries appear in the opening section of the report. Because funding emerged as the most pressing concern of survey respondents, a special section on funding barriers to educational networking precedes the general discussion of funding strategies.

The narrative analysis is followed by 52 *State Profiles* presenting survey responses or education demographic data from all 50 states, plus the Bureau of Indian Affairs and Puerto Rico. The *Appendices* contain the names and addresses of the individuals responsible for educational technology in the responding states and the TENET questionnaire.

---

[1] Data from all four states are included in the *State Profiles* elsewhere in the report.

Data Analysis Methods

Comparing the responses to the five broad categories of information sought in the survey provides insight into exactly where the information highway is reaching America's schools, where the highway has been blocked, and which obstacles loom large. Please note, however, that this report seeks merely to highlight this information; it does not attempt to diagnose the difficulties or to advocate specific solutions for the barriers to networks identified by survey respondents. An effort has been made to treat each state's data objectively, and to present responses as accurately yet uniformly as possible. Survey responses were not second-guessed; no secondary sources were used to verify replies. Rather, every effort has been made to transcribe or analyze these data *as reported on the questionnaire by respondents*.

The prompts on the questionnaire themselves were designed to invite a variety of responses, from a simple "yes" or "no" to lengthy descriptions. And responses *did* range in length and complexity. While some participants answered every prompt tersely, many supplied detailed information when appropriate. These ruminative replies are among the most provocative material collected here; where space permits, they appear verbatim in the *State Profiles*.

A similar range of responses occurred with requests for quantitative information: some participants responded with figures rounded in the thousands and other were precise to the single digit. It is assumed that respondents provided the most current numbers available and that the numbers apply to public K-12 school systems only. Likewise, headcounts of teachers are assumed to apply exclusively to full-time, permanent staff and "districts" to refer only to those with actively enrolled students. Nonetheless, enrollment figures should be read with a skeptical eye, for definitions vary widely from state to state. Louisiana, for example, could be reported as having 66 or 74 local education agencies, depending on whether vocational school districts are included along with the state's regular parish and city districts—a difference of 12 percent. Precisely accurate comparisons cannot be made in such diverse circumstances.

Fall 1994: Networking Reaches K-12 Schools

Based on survey responses, the goal of Internet connectivity by the year 2000 for every public K-12 classroom probably will not occur in any of the 46 reporting states, the Commonwealth of Puerto Rico, nor in schools managed by the Bureau of Indian Affairs. However, almost every state has begun to incorporate educational telecommunications in their broader technology plans and nearly 80 percent have deployed telecommunications networks carrying public information. Seventeen states reported that, at the time of the survey, a handful of their schools already had an established Internet presence with Gopher or Mosaic addresses for specific schools or school districts. Should use of the national information infrastructure (NII) continue growing at its present rate, by the year 2000 every state should be able to boast that at least some if not many of its K-12 teachers can include network-based activities in their lesson plans.

Only three respondents (from Maine, Vermont, and Puerto Rico) characterized their state as lacking network telecommunications. Six others described their networks as "planned" or "proposed."[1] In contrast, 38 states (79%) said their "state networking efforts" were "partially operational" or "operational."

While these self-descriptions may indicate the general sophistication of a state's network infrastructure, they were subject to broad interpretation by survey participants. A respondent from a state recognized as a pacesetter in educational networking described two discrete phases of its extensive and busy fiber optic network as "planned" and "proposed." The distinction between "operational" and "partially operational" networks (undefined on the questionnaire) seems to have been especially murky to other respondents, prompting some to interpret the terms very freely. One "operational" state noted its network offers e-mail services to state employees (and reported none other) while a state in a different region summarized its extensive menu of information services with the "partially operational" designation. Yet another state bestowed three separate status labels upon its three separate networking enterprises. Obviously, one state's networking ideal could be the first step for another.

Within the bounds of these caveats, nearly 80 percent of the surveyed states described their networks as "partially operational" or "operational." By October 1994 the lion's share of states had implemented or were preparing to implement public telecommunications networks.

Were there other, more precise measures of a state's networking attainments? Two were mentioned on the TENET questionnaire: the state's use of other information technologies and the range of information services it makes available on-line.

The most frequently reported technology was the state information network, which was in use in 29 of the states (60%). These intermediate systems were usually linked to interstate, national, and global networks on one hand and to community or site-specific local networks on the other. In many cases reported by survey respondents, the actual local internetwork link was made by server computers operating Gopher or Mosaic software. A majority of states reporting such networks also named or knew of specific K-12 schools that were operating a Gopher or Mosaic address on the Internet—with some anomalies. Maine, for example, reportedly lacked a state Gopher server and piggybacked its telecommunications services on the state university system. Yet Maine reported that at least one public school within the state borders possessed a Gopher or Mosaic server delivering Internet access.

But Maine is an exception. Speaking in the broadest of generalizations, it was far more typical that larger public institutions, such as state government, would first implement information networks. Only later would smaller public institutions, community libraries and K-12 schools among them, establish their own local area networks using on-site server technology.

When the survey was taken, K-12 schools were just beginning to enter this new world. One-third of the surveyed states (17) named at least one K-12 school maintaining an Internet presence via on-site Gopher or Mosaic servers. Both Arkansas and Utah, for example, listed Gopher or Mosaic addresses for two schools while New Mexico (at the top end) reported network nodes at 27 schools. Colorado noted school districts in Fort Collins and Boulder maintained Gopher or Mosaic servers that delivered network service to an unspecified number of schools. New York mentioned that "a number" of intermediate educational units (BOCES) were establishing gateways to the World Wide Web, and Nebraska reported Internet addresses for 19 educational service units.

If the addresses provided on the surveys are reliable indicators, there are more high schools than middle or elementary schools that have Internet hookups and the benefits such technology affords. Seldom were elementary schools named as possessing Gopher or Mosaic addresses that directly connect students to the wealth of expertise and information available on the wide area networks of the Internet.

Such trends are not surprising. A 1993 study conducted by Princeton Survey Research Associates found that only 15 percent of teachers work in a "high-tech" environment offering:

> computers in their classrooms (82%) and access to fax machines (69%) and modems (94%) at the school site....High-tech environments are most likely found at the senior high level, as well as in larger schools, suburban schools and in more affluent school districts.[2]

If the variety and depth of information services available on a network can chart the sophistication of a state's systems technologies, survey results reveal a very hopeful trend. More than 87 percent (42 of 48) of the respondents reported that their states provided electronic information about all or some combination of the legislature, public utility or public service commission, department of education, and "other" public organizations. Reporting no electronic information services when surveyed were Puerto Rico and five states: Connecticut, Idaho, Maine, New Hampshire, and Vermont.

Since the surveys were usually completed by employees of state education departments, it could be predicted that the most frequently listed information services were educational (36 states) followed by "other" services (30 states): often public library databases, e-mail services, newsgroups and bulletin board systems, or file transfer protocol (FTP) tools to download remote data files. Just under half of the states (22) electronically posted information on their legislatures, while five reportedly provided data from their public utility commissions.

A significant majority of respondents reported that freenets or community data networks existed somewhere within their state borders: 37 states identified one to three community networks. Slightly more than half of these localized networks were described as collaborating to some degree with the state department of education.

States, communities, and their public schools were slowly adopting advanced telecommunications technologies. With 17 states reporting that at least one of their schools operated servers on-site to connect to the Internet, it seems some progress has been made since Honey and Henríquez' widely disseminated 1993 study of telecommunicating teachers:

> ...use of the Internet is not yet a widespread or common practice among educators in the K-12 community; only half of our technologically sophisticated respondents [48%] report having access to the Internet,...In addition, our findings suggest that the Internet is serving as a more effective resource for professional development activities than it is for student learning activities.[3]

While it may be premature to call these findings obsolete, survey responses demonstrate quantifiable progress has been made in bringing the power of educational networking within the reach of American public school students.

---

[1] New Hampshire's self-described networking status was unclearly marked on the returned questionnaire.

[2] Princeton Survey Research Associates. (1992, June). *National Education Association Communications Survey: Report of the Findings*, p. 6. Princeton Survey Research Associates. Princeton, NJ: Author.

[3] Honey, Margaret and Andrés Henríquez. (1993). ***Telecommunications and K-12 Educators: Findings from a National Survey***, pp. 30-31. New York: Center for Technology in Education, Bank Street College of Education. It should be noted that the Honey and Henríquez study is not strictly comparable to this one. In the former, classroom teachers were interviewed rather than the state officials surveyed here. The teachers reported on conditions in their schools instead of summarizing statewide conditions, as participants do here. Most respondents to the earlier survey were located in the northeastern United States, rather than coming from across the nation as here. Finally, the pool of Internet users and Internet tools has grown exponentially since 1991 and 1992, when Honey and Henríquez conducted their survey. Yet, as noted in the text, the Honey and Henríquez findings have been often quoted and provide a unique point of reference in discussions of K-12 adoption of Internet-based teaching.

Technology Plans in Educational Networks

The prominence awarded to telecommunications networks in general technology plans can indicate how serious a commitment state government has made to regional implementation of the national information infrastructure. No sooner had federal Goals 2000 legislation passed in March 1994 than the Clinton administration began stumping for state K-12 educators to adopt networking tools. A new infusion of federal seed money became available to every state that incorporated educational networks in its broader technology plans.

Perhaps in response to federal patronage, by October 1994 a stunning majority of the surveyed states had embraced telecommunications networks—especially for their schools. They reportedly had built in computer telecommunications modules in one of two plans: in either their general state technology plans or in their plans specifically for K-12 schools.

In fact, 28 states (58%) reported having telecommunications components in either their statewide technology plans or in their technology plans for K-12 schools. Thirteen more (27%) were penciling in telecommunications networks for their statewide or K-12 technology plans when surveyed. The remaining seven reported that, as of October 1994, they had no plans for educational networking.

States tended to include educational networks in either their state plans or in their public schools plans. Only 15 states (31%) reported telecommunications components appear in both plans.

Among states formulating their telecommunications plans when surveyed, the great majority were more apt to plan networking functions for their schools or for their schools *and* state than for their state alone. In fact, eight of the 17 states claiming "in process" planning had specified networking exclusively for their schools, while seven were incorporating networking in both their state and school technology plans. A mere two states planned for educational telecommunications networks solely in their state technology plans.

Did incentives spun off from Goals 2000 legislation prod states into adding educational networking to their technology plans? Since the survey did not ask exactly when the participating states began telecommunications planning, the causal relationship between passage of the federal measure in March 1994 and state-based network blueprints by the following September is nebulous.

Yet it's entirely possible that state-based Goals 2000 committees engendered by the legislation may serve important functions in the handful of states that otherwise lack plans for school telecommunications. Maine, Vermont, and Puerto Rico each reported a dearth of statewide technology planning, for example. Yet all three have appointed Goals 2000 committees, presumably enabling them to tackle technology planning among other educational reforms.

Actually, every one of the 11 states reporting no Goals 2000 committee at the time of the survey had incorporated telecommunications networking into their K-12 technology plans. It appears that, when these states planned network technology, they planned it first for schools.

There also appears to be a relationship between states that described their networking efforts as "operational" or "partially operational" and active technology planning. Technology plans alone cannot be credited with prompting states to initiate educational networking. Apparently in some states (California, Georgia, and Michigan among them), piecemeal public network deployment began before formal technology plans were written.

Yet nearly every state that was planning telecommunications networks for their schools, their state, or both also described their networking efforts as "operational" or "partially operational"; that is, 19 of 21 states with K-12 plans, 20 of 23 with state plans and 14 of 16 with plans for both K-12 and the state consistently gave themselves the highest technology development grades available on the questionnaires. The correlation is open to differing interpretations:

- Specific plans for networking ensure the technology is adopted.
- In those states where network technology has been implemented most successfully, it has almost always been planned.

Technology planning remains productive for states intent on educational reform. Between March and September 1994, 34 of the responding states (71%) had formed or were forming Goals 2000 committees—perhaps as evidence of their commitment to bettering their schools or perhaps as a stratagem for obtaining more federal dollars. But it's obvious that, among educational reformers, a preferred means of improvement was planning and developing K-12 networks.

Funding: The Dominant Barrier to K-12 Telecommunications

We've seen that by autumn 1994 most states were committed to establishing information networks for K-12 public schools. Most of the responding states had implemented telecommunications networks intended to serve the educational community along with other public organizations. Even in those states lacking established public telecommunications networks, officials had written technology plans pointing the way toward network-based schooling for their elementary and secondary students.

Yet barriers to telecommunications networks exist. And they may have forced otherwise supportive educators and state officials to postpone or restrain educational network plans. What were these potential barriers? Did they differ from state to state? Survey respondents rated several specific "potential barriers" on the questionnaire using a Likert Scale.

The questionnaire listed eight factors as "potential barriers…to your state's telecommunications networking efforts." These potential barriers were:

A. *Legislative and Regulatory Actions.*
B. *Technical Infrastructure and Support.*
C. *Professional Development and Training.*
D. *Funding: Initial and Long-term.*
E. *On-line Ethical and Liability Issues.*
F. *Infusion into Goals 2000 and Educational Development.*
G. *Developing Private Sector and Community Partners.*
H. *Educational Systems and Policy Barriers.*

A ninth, *Other: Please Specify* barrier concluded the list.

Respondents were asked to assign each potential barrier with a specific numerical rating on a scale from 1 to 5. These ratings were to delimit "the extent to which [each potential barrier] (1) is a problem or (5) is not a problem." The degree of difficulty decreased by steps from the most problematic Level 1 to the nonproblematic Level 5. Precise definitions of Levels 2, 3, and 4 did not appear on the questionnaire.

One respondent rated only five of the barriers, presumably in descending order from the most to the least problematic: *Funding*, *Infrastructure*, *Training*, *Developing Partners*, and *Systems-Policy*. The barrier ratings of four states (Georgia, New Mexico, Oregon, and Vermont) were provided by two respondents who occasionally gave differing ratings to specific barriers. Please see the *State Profiles* for these double ratings. Ten of the 48 states responded to the *Other: Please Specify* barrier, although very few gave numerical ratings to such responses.

If any single finding stands out in the survey, it is that a majority of states rated *Funding* as the most daunting barrier to educational networking.

Twenty-seven out of 48 respondents (56%) indicated that *Funding* is a Level 1 difficulty; i.e., *Funding* "is a problem " [See Graph D]. That half the states designated *Funding* as a Level 1 problem is not in itself remarkable; however, as Graphs A to H show, no other potential difficulty elicited such a unified, or extreme, response. Furthermore, this Level 1 rating should be viewed in comparison to the generally far lower ratings given to other potential barriers.

For example, while 27 respondents gave *Funding* a Level 1 difficulty rating, only eight chose the Level 2 rating, six each assigned it a Level 3 or 4 rating and only two gave it a Level 5 ("not a problem") difficulty rating.

Moreover, a higher number of respondents gave the *Funding* barrier a Level 1 rating than any other barrier and rating combination on the survey. The distinction becomes clear in Table 1, in which the survey's top five barrier-rating combinations are ranked by frequency.

The gulf between the *Funding* rating and those assigned to other barriers is dramatized by Table 1: 27 respondents agreed that *Funding* is a Level 1 difficulty. The second highest number of respondents to agree on a barrier/rating combination were the 18 who gave Level 3 ratings to the *Systems-Policy* barrier [Graph H]. Then come the groups of 16: 16 respondents selected the *Goals 2000* as a Level 3 difficulty [Graph F]; 16 the *Developing Partners* as a Level 3 [Graph G]; 16 each listed *Training* as a Level 2 and Level 3 [Graph C].

The Five Most Frequently Selected Barrier/Rating Combinations

Barrier Rating	Frequency of Response	Percentage of Barrier
Funding/1	27	56.3%
Systems-Policy/3	18	37.5%
Goals 2000/3	16	33.3%
Training/2	16	33.3%
Training/3	16	33.3%

Table 1

There is also a connotation of weight or importance innate to the Likert Scale itself. In this survey, a barrier given a Level 1 difficulty rating would naturally be viewed as far more critical than a barrier with a relatively insubstantial Level 4 or almost nonexistent Level 5 difficulty rating.

Recognizing this implication, most survey respondents selected Level 1 difficulty ratings sparingly, thereby creating a sense of urgency whenever they appeared. Here again, the 27 states selecting Level 1 for the *Funding* barrier is exceptional, as Table 2 illustrates.

Note that 27 respondents (56.3%) gave Level 1 ratings to the *Funding* barrier [Graph D]. In contrast, 14 respondents (29%) selected Level 1 ratings for *Infrastructure*—the second largest group of respondents to rate a barrier as a Level 1 problem [Graph B]. The third most frequent occurrence of Level 1 ratings were the 12 respondents (25%) for *Legislative Actions* [Graph A]. And so it went as the groups grew smaller. It is worth noting that both the *Infrastructure* and *Legislative Actions* barriers are arguably pertinent if not intimately linked to funding issues.[1]

The scale itself also highlights the extraordinary nature of 27 participants choosing to rate a single barrier as a Level 1 difficulty. A Likert Scale invites moderation; respondents are typically reluctant to assign ratings at the extremes of 1 or 5. But while reticence was the apparent rule with other barrier ratings, 56.3 percent of survey respondents rated *Funding* at the most noticeable extreme of 1.

Level 1 Ratings, Ranked by Frequency

Barrier Name	Frequency of Level 1 Rating	Percentage of Responses to Barrier
Funding	27	56.3%
Infrastructure	14	29.1%
Legislative Actions	12	25.0%
Training	9	18.8%
Systems-Policy	7	14.6%
Developing Partners	6	12.5%
Ethics/Liability	5	10.4%
Goals 2000	2	4.2%

Table 2

And it was far more typical for respondents to designate barriers with difficulty ratings in the moderate Level 2, 3, or 4 range, creating the bell-shaped pattern seen clearly on Graphs C, E, F, G, and H. A glance at the eight graphs demonstrates typical versus extraordinary patterns. For instance, 18 states (37.5%) gave the *Systems-Policy* barrier a Level 3 difficulty rating—the most frequently selected difficulty designation for that barrier [Graph H]. Graphs C, E, F, and G demonstrate that similar frequency distribution patterns occurred with four other barriers:

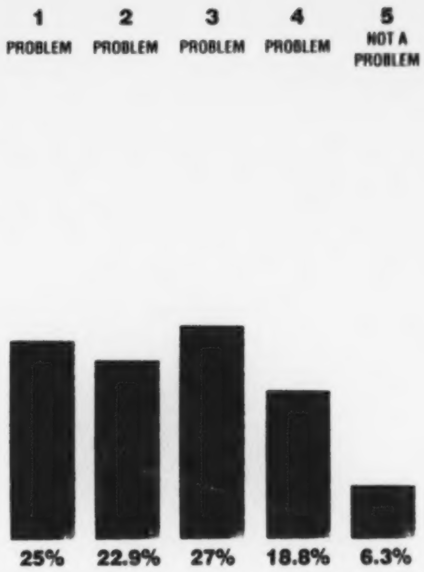
- *Training* (16 respondents, Level 2 and 16 respondents, Level 3).
- *Ethics/Liability* (15 respondents, Level 3).
- *Goals 2000* (16 respondents, Level 3).
- *Developing Partners* (16 respondents, Level 3).

It's plain that, as a barrier to K-12 networks, *Funding* is in a class by itself. And survey respondents had broadcast their extraordinary concerns with financing school networks in an equally extraordinary show of consensus.

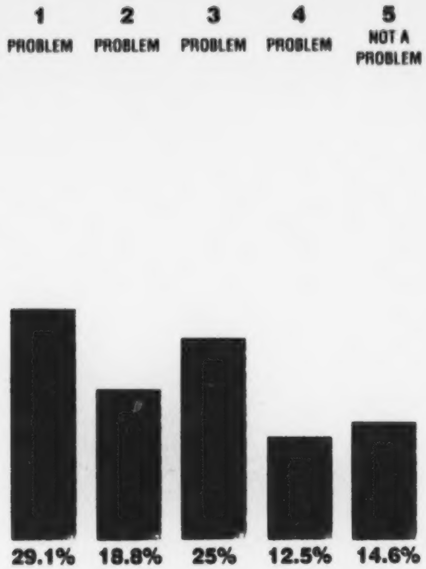
---

[1] It may be productive to remember that concerns related to *Training*, *Systems-Policy*, and *Ethics/Liability* do not usually surface until a functional system is up and running. Also, *Goals 2000* involves political considerations that may have colored participants' responses.

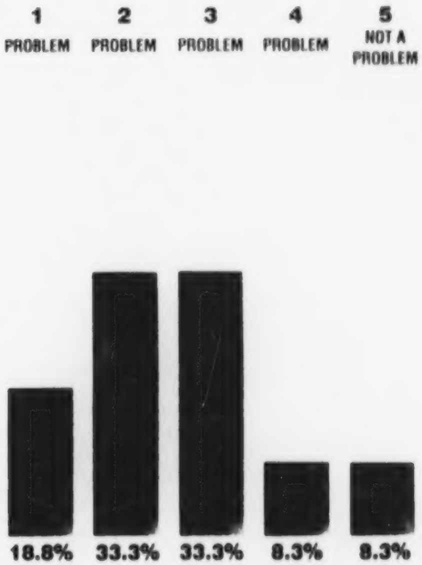
A Legislative and Regulatory Action



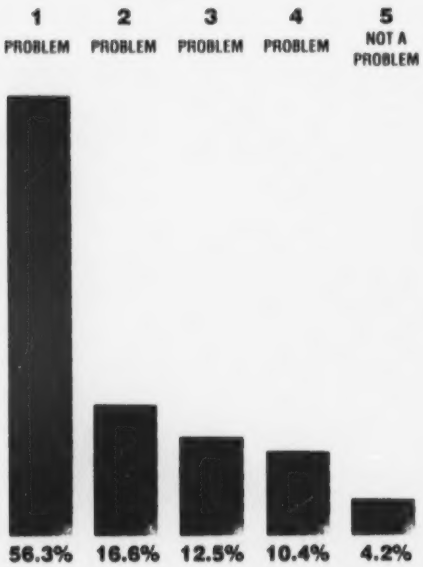
B Technical Infrastructure and Support



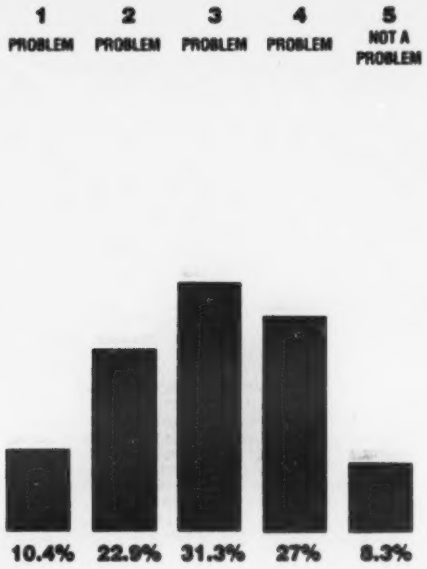
C Professional Development and Training



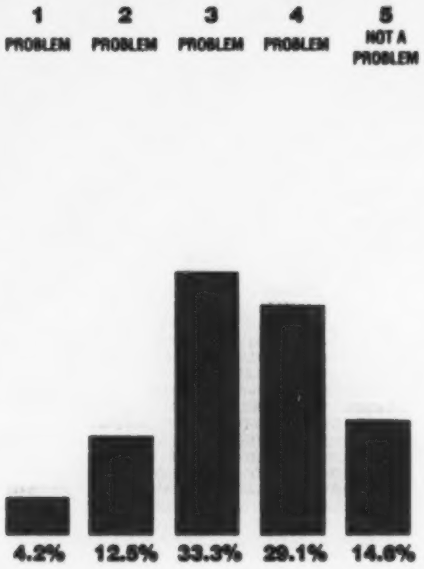
D Funding: Initial and Long-term



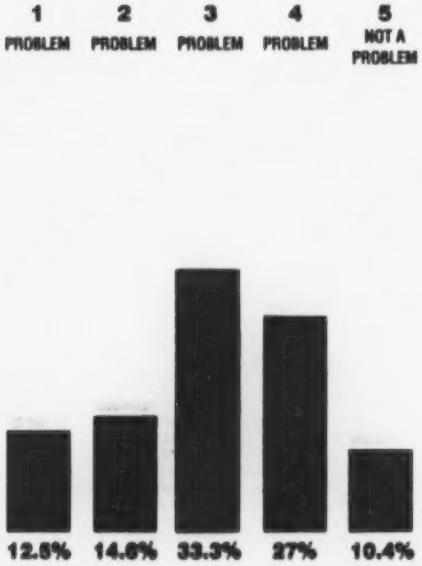
E On-line Ethical and Liability Issues



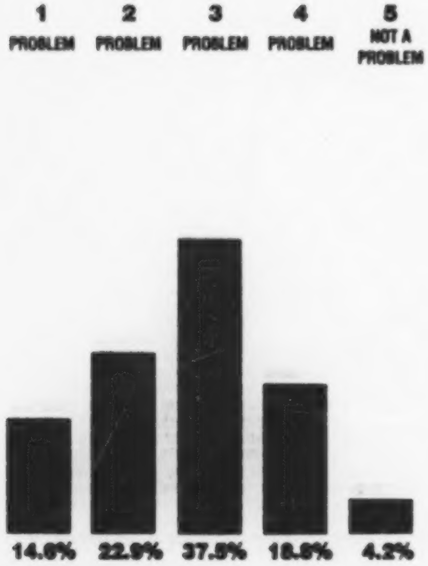
F Infusion into Goals 2000 and Educational Development



G Developing Private Sector and Community Partners



H Educational Systems and Policy Barriers



Funding K-12 Networks: Sources, Strategies, and Concerns

A Level 1 difficulty rating by 56 percent of survey respondents indicated that financing educational networks worries officials from a meaningful number of states. Examining how states have paid for their K-12 networks may cast light on why financial concerns overshadowed the other barriers rated by survey participants.

What sources of funding have been available for educational networking: local district, state, or "other"? Nineteen of the states noted they considered all three (local district, state, or "other") as funding sources for networking projects. Another 19 states relied on two funding sources: 12 on local district and state funds while four sought local district and "other" funds and three sought state and "other" funds. Eight states, Puerto Rico, and the Bureau of Indian Affairs reported only a single source of funding available to them: either local district or state or "other."

Significantly, the greater the number of funding sources reported by a state, the less likely it was to list *Funding* as a Level 1 barrier in K-12 telecommunications implementation. States reporting only one source to fund their telecommunications efforts, not surprisingly, were also most likely to assign a Level 1 rating to *Funding*. It seems to have mattered little whether the single funding source was state, local district, or "other," although Alabama and Maryland, the two states reporting only local district funding, rated *Funding* as a Level 1 problem. Likewise with Arkansas, Maine, and Wyoming; all were reportedly dependent on the single "other" category of funds and all rated *Funding* as a Level 1 difficulty. Of the three states relying on state-only funding, Montana also gave *Funding* a Level 1 rating, slightly softening the correlation between the array of at-hand financial resources and heightened funding concerns.

States with two sources of funding tended to be less apt to report funding worries than those with only one—as would be expected. For instance, of the 12 states relying on local and state funding to develop educational telecommunications, five listed *Funding* as a Level 1 concern (Alaska, California, Illinois, Minnesota, and Vermont). On the other hand, Connecticut, Kansas, Louisiana, and South Dakota, the four states citing funding sources as local and "other," all gave *Funding* a Level 1 rating.

A significant number of states (25) were sharing resources with other educational networks—almost always from universities. This seemed to be indicative of the trend toward the development of partnerships between universities and primary/secondary school systems. It also appears to be a means for public schools to cultivate multiple funding sources. However, multiple funding resources were not a universal cure for schools systems coping with funding stresses. A third of the states listing *Funding* as a Level 1 barrier cited their funding as coming from local, state, and "other" sources—that is, a significant portion of states that had maximized funding sources nevertheless cited *Funding* as a Level 1 barrier to educational networking.

For all states—triple-, dual-, or single-funded—the "other" category might yield the greatest funding opportunities. A total of 31 states (64%) checked "other" as a source of funding for their educational networks. Eleven of the 31 declined to identify the "other" funding source. Eight of the remaining states listed private sector organizations as sources of telecommunications goods and services or direct funding for school networks. All of the remaining 12 states, however, named federal sources as the "other" or as one of their "other" funding sources; the dozen included the Bureau of Indian Affairs, a federal school system. Similar to Puerto Rico, some survey participants may have cited federal sources because their K-12 telecommunications networks had been funded primarily by the National Science Foundation, a sire of the American Internet. But more important than which agency was named is the fact that a quarter of the states seeking educational funding looked to Washington.

Where else did states reportedly seek funding? Among the "other" sources cataloged were corporate grants, gifts from philanthropic organizations, company donations of used computer equipment, partnerships with businesses. These included the ISDN deployment planned for a limited number of California schools by Pacific Bell Corporation. Georgia reported, under the "other" category, that state lottery receipts had been tagged for school networking. While awaiting legislative approval of annual operating funds beginning the 1995-96 fiscal year, Arkansas drew a loan from its teachers' retirement system. North Dakota charged school users membership subscriptions, in the manner of Prodigy, CompuServe, and other commercial network service providers.

Only New York mentioned bond issues, a traditional means of capitalizing education. Nine states reported they had employed a relatively new funding strategy: their public utilities commissions had mandated specialized service tariffs for public school networks. In the case of Nebraska, the utility commission simply deregulated service rates, giving local districts the latitude to negotiate their own discounts. At the opposite end of the spectrum, Tennessee instituted tiered pricing based on the sophistication of the telecommunications services used. But the majority of government-dictated K-12 tariff programs called for schools to receive flat percentage savings on standard or commercial telecommunications usage rates. Texas schools, for example, benefit from a standardized 25 percent discount for any in-state telephone service used primarily for distance learning.

In a promising trend, nearly half of the nine states that instituted specialized tariffs for public school networking (Iowa, Nebraska, New Mexico, and Texas) also rated *Funding* as a barrier in the moderate 2, 3, or 4 difficulty range. Perhaps specialized tariffs for educational networks do alleviate funding pressures. At the time of the survey, four states, (Kansas, West Virginia, Vermont, and Utah) reported they were establishing special tariffs for education. Subsequent study of these states could better determine the impact of specialized service tariffs.

Communications service providers not only shape the cost of telecommunications networks; they are also key players in promoting information infrastructure development, according to one interpretation of survey results. Thirty states (62%) reported that a major service provider had begun a program to implement a statewide information infrastructure—and in most cases that supplier was a telephone company. Eight of these states reported the infrastructure was already partially available; 11 described the infrastructure as "in process"; and six said their infrastructure was in the planning stage. In five of the 30 states, the precise level of infrastructure development was unclear.

As one would expect, the active promotion of infrastructure development by a service provider seems to have nudged some states into action. Twenty-six of the 30 states reporting such programs also described their networking efforts as "partially operational" or "operational." But like the correlation between technology plans and standing Goals 2000 committees, the status/infrastructure connection may be equivocal. There were insufficient survey data to determine how frequently provider promotion of networking led to implementation, if a causal link exists between the two at all.

To recap survey findings: states seemed to ease the financial burdens of educational networking when they:

- Maximized funding opportunities.
- Mandated user discounts for K-12 public schools.

Finally, states may tend to develop school networks sooner with the encouragement of telecommunications service providers.

State administrators have demonstrated their willingness to support telecommunications networks for public school students. Financing the undertaking is a problem many are yet to surmount.

Barriers to K-12 Telecommunications

What other general trends can be identified in survey responses? There was surprising coherence in the obstacles volunteered by survey participants.

Thirty states reported barriers related to their regional locations and 39, obstacles related to population distribution. Because the actual obstacles identified by the states do not fit neatly in into the two tidy categories of "Regional Problems" and "Population Problems," it's best to identify specific problems uncovered in the surveys.

Alaska's respondent summarized obstacles at their extreme:

> The bulk of Alaska's population resides in Anchorage, Fairbanks, and Juneau. The rest of the population is scattered across the state in small rural areas with limited access—most have no roads into the community. This results in technological haves and have-nots—most of the rural communities have no access to 56KB lines—the infrastructure just isn't there. Many of those rural communities have no cash-based economy—they are Native subsistence villages. Therefore, at this time, there is limited incentive for the telephone companies to invest in the infrastructure in these areas...when the traffic will not provide a return on that investment.

Variations on these themes resounded on many of the surveys.

For instance, many respondents described problems arising from populations split between crowded urban areas and their rural counterparts. In some states, urban school districts benefited from easier access to people with the technical expertise to deploy and administer educational networks. Colorado reported that a lack of such professionals creates problems in the more isolated areas of that state. A total of eight states—including the leaders in technological development, Texas, Hawaii, and Tennessee—explicitly pointed to a "lack of human infrastructure" as a barrier to educational networks.

Ten states reported that a significant percentage of their school populations is scattered or pocketed in remote locations; several others noted the "rural character" of their state creates difficulties in physically linking widely dispersed campuses and school districts. Among these is South Dakota. Only a portion of South Dakotans profit from access to "a state backbone running from east to west in the center of the state, but the majority of schools are some distance from this line." As the Alaskan respondent noted, in such circumstances service providers have limited incentives to lay costly fiber networks that few people will use.

A total of 18 states identified barriers related to telephone service and telecommunications infrastructure—particularly in rural areas. Some members of this group judged the rural infrastructure as of poor quality or as simply inadequate to supply advanced telecommunications technologies to schools.

Others, including New Mexico, said all too frequently rural telecommunications service was provided by a crazy quilt of local "mom and pop" phone companies hampered by outmoded technology and a lack of current engineering expertise. Eight others had simply too many telephone companies serving state citizens. Minnesota distinguished itself in terms of sheer numbers: it reported that 93 phone companies serve its citizens. Obviously, it would be a challenge for state technology planners to induce so many competitors to cooperate in building a flexible, state-of-the-art public network infrastructure.

And a significant number of states reported a gulf between the school districts, often expressing this disparity with the phrase "equity issues," which appeared in the surveys of eight states. While it sometimes invoked urban versus rural concerns, the phrase had wider meaning.

For instance, Missouri linked "access and equity because of diversity." For the respondent from Illinois "equity" had to do first with quantity and demographic counts: "One-half of the student population is located in Chicago and its surrounding areas. Equity between urban and rural is an issue." Rhode Island echoed this sentiment: "Urban areas lack funds, human resources, and significant business partners."

But the barriers facing the majority of states were too idiosyncratic to be summarized here. Please see individual *State Profiles* for these data.

II. State Profiles

BEST COPY AVAILABLE

Alabama

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
128

Number of school buildings
1,400

Number of K-12 teachers
41,000

Number of K-12 students
715,000

Number of students in largest district
65,000

Number of students in smallest district
750

Number of districts that have fewer than 1,000 students
2

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **Yes**

Telecommunications contact
Dr. Ron Wright

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Eleven regional research and inservice centers at state universities.

Funding for Educational Networks

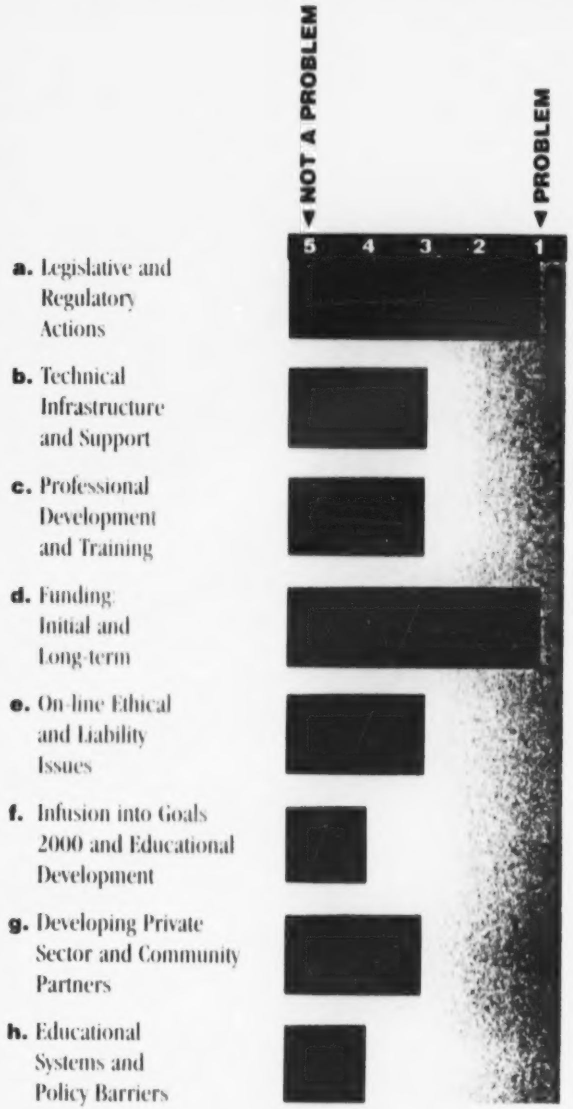
Funding sources available
Local District
State
Other
In state plan but not yet funded.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
$7.50 for local LATA calls and 800 numbers.

Tariff information is available on-line **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Lack of phone service (at the level needed, e.g., 56KB lines) in some rural areas.

Networking issues or obstacles related to population distribution
Same as above.

Other concerns about telecommunications
No response was provided.

For further information, contact
Dr. Ron Wright
Alabama State Department of Education
3317 Gordon Persons Building
50 North Ripley St.
Montgomery, AL 36130
WRIGHTRJ@AOL.COM
(205) 242-8071
Fax (205) 242-0482

ADDITIONAL INFORMATION

Identified and rated another Barrier to State Networks
Funding. 1

State's computer networking efforts are operational at system level—planned at the school level.

AK

Alaska

STATE FACTS

Status of State Networks — **Operational** — **Partially Operational** — **Planned** — **Proposed** — **No Current Plans**

Number of school districts
54

Number of school buildings
467

Number of K-12 teachers
7,283

Number of K-12 students
119,201

Number of students in largest district
44,280

Number of students in smallest district
23

Number of districts that have fewer than 1,000 students
41

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
The network used by schools is the University of Alaska Computer Network, which provides e-mail and Internet access.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**
Not that I'm aware of.

Community networks or freenets established in state **Yes**
Fairbanks community network and State Library Electronic Doorway (SLED), a function of the state education department. Otherwise, there are no formal collaborative efforts with community systems.

Technology Plans

Long range planning for telecommunications incorporated into state technology plans **Yes**
The Governor's Telecommunications Information Council (TIC) has a plan that primarily focuses on applications for state government and some public information use.

Long range planning for telecommunications incorporated into state K-12 plans **No**
Not yet. Will be part of Goals 2000 planning.

Goals 2000 planning committee established **Yes**
Being finalized.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
We have only one: the Southeast Regional Resource Center, which currently coordinates our Star Schools project but has no other staff assigned to these functions.

Funding for Educational Networks

Funding sources available

Local District

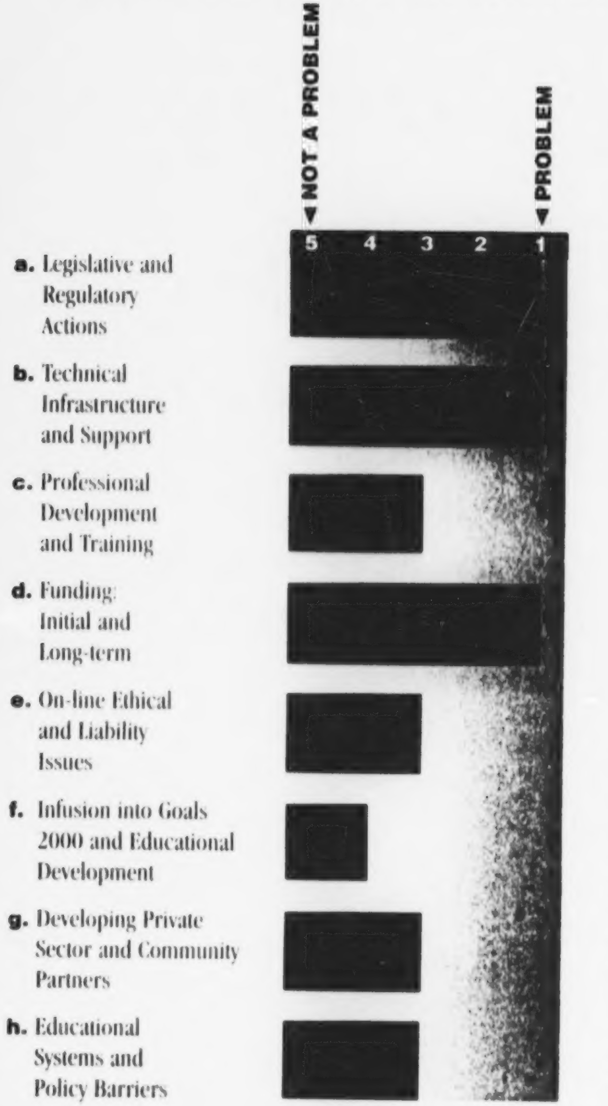
State (Planned)

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

The topography and wide dispersion of population in the state in small remote villages makes it impossible to utilize land lines. Most communications in rural Alaska is via satellite.

Continued in Additional Information

Networking issues or obstacles related to population distribution

The bulk of Alaska's population resides in Anchorage, Fairbanks, and Juneau. The rest of the population is scattered across the state in small rural areas with limited access—most have no roads into the community. This results in technological haves and have-nots—most of the rural communities have no access to 56KB lines—the infrastructure just isn't there. Many of those rural communities have no cash-based economy—they are Native subsistence villages. Therefore, at this time, there is limited incentive for the telephone companies to invest in the infrastructure in these areas...when the traffic will not provide a return on that investment.

Other concerns about telecommunications

In many ways, Alaska has the greatest needs for modern telecommunications, yet currently policymakers are not addressing this issue. Perhaps by the time Alaskans realize what they need and start making demands on the system, the window of opportunity offering to help subsidize the infrastructure through grants and other funding sources will be gone.

For further information, contact

Lois Stiegemeier
Alaska Department of Education
801 W. 10th St., Suite 200
Juneau, AK 99801-1894
rmls@tundra.alaska.edu
(907) 465-8724
Fax (907) 465-3396

ADDITIONAL INFORMATION

The current infrastructure in small, remote villages precludes high-speed, reliable data transmission. In addition, because of that fact, intrastate rates are probably the highest in the nation. While other places, even rural areas of the nation, have the ability to lay fiber, there are some parts of Alaska that could never have fiber laid. New wireless technologies may hold some promise, but for the short-term the state will have to determine how to upgrade satellite-based technologies and who will pay for such an expensive venture. In addition, the rural areas may never see the benefits of competition, since we have a limited number of long distance providers and no competition in local telephone providers.

BEST COPY AVAILA

Arizona

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
226

Number of school buildings
1,008

Number of K-12 teachers
37,879

Number of K-12 students
709,261

Number of students in largest district
67,639

Number of students in smallest district
6

Number of districts that have fewer than 1,000 students
126

Network Development

Information services currently provided by state network.

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
K-12 Gopher/Telnet information sources.

State Gopher server or Mosaic home page address **Yes**
162.126.3.3 (Gopher)

K-12 Gopher server or Mosaic home page address **No**
Some in development.

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
Minimally.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**
Will be revised as part of the state's Goals 2000 effort.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Kathryn Kilroy

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

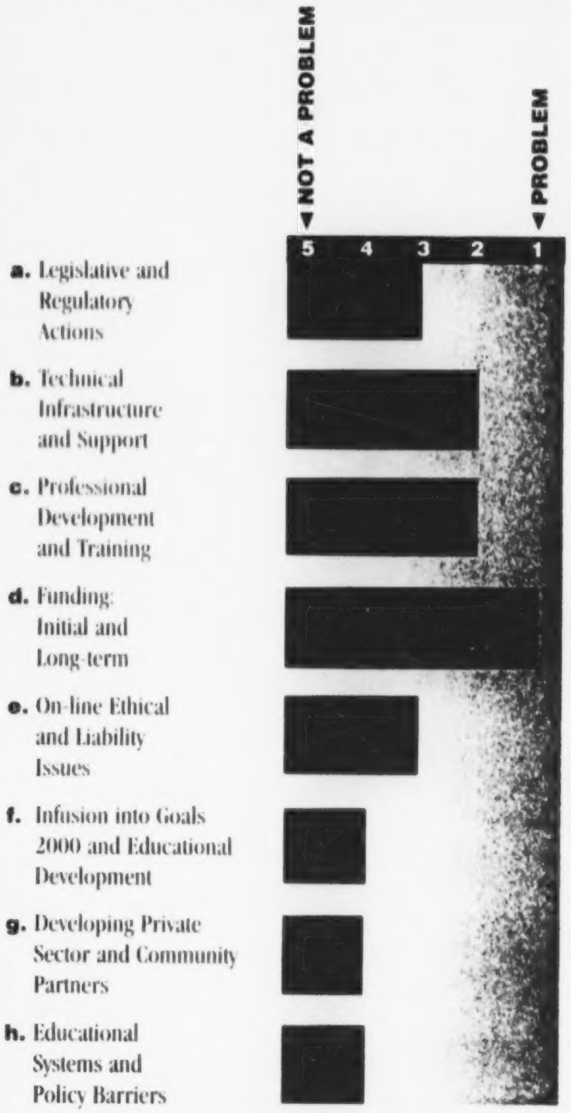
State (Planned)

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
US WEST Frame Relay Clouds.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

Although our local carrier is a partner in our statewide networking efforts, there is a need for an improved relationship between its regional office and the state.

Networking issues or obstacles related to population distribution

Rural schools and those isolated urban schools do not have sufficient resources to adequately address networking.

Other concerns about telecommunications

No response was provided.

For further information, contact

Kathryn Kilroy, Associate Superintendent
Arizona Department of Education
1535 W. Jefferson St.
Phoenix, AZ 85007
kkilroy@ade.state.az.us
(602) 542-4889
Fax (602) 542-3590

Arkansas

STATE FACTS

Number of school districts	**314**
Number of school buildings	**1,098**
Number of K-12 teachers	**30,000**
Number of K-12 students	**450,000**
Number of students in largest district	**26,000**
Number of students in smallest district	**91**
Number of districts that have fewer than 1,000 students	**2/3 of total**

Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **Yes**
HP. k12.ar. us. Type Gopher.

K-12 Gopher server or Mosaic home page address **Yes**
Texarkana: Darkstar.k12.ar.us
Ft. Smith: CLX.k12..ar.us

Community networks or freenets established in state
Under development.
See Additional Information

They collaborate with the State Department of Education **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**
The Governor is forming a task force to develop a plan.

Long-range planning for telecommunications incorporated into state K-12 plans **No**
We are developing one currently.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Bob Friedman

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Of the 15 cooperatives, perhaps three have staff that could or have assisted districts or us in telecommunications activities.

Funding for Educational Networks

Funding sources available

Local District

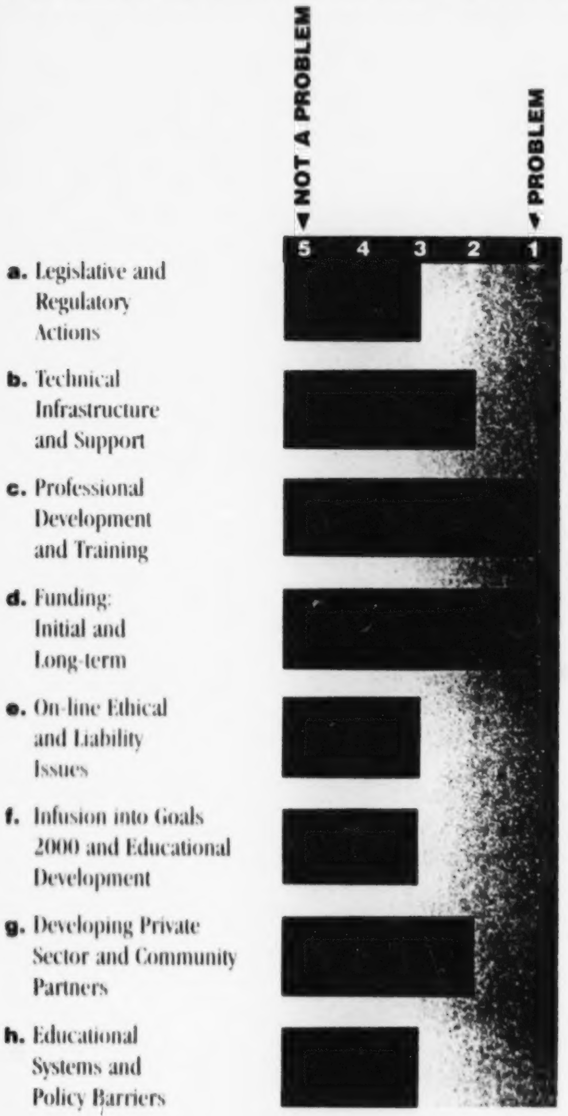
State (Planned)

Other
See Additional Information

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
Overall, the tariff provides about a 55 percent reduction. It includes frame-relay services for T1, 56 and 384 KB and nonframe relay services for T1 and 56KB. Fiber is not part of the tariff.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
See Additional Information

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
None.

Networking issues or obstacles related to population distribution
None.

Other concerns about telecommunications
Rural; small economic base upon which to fund technology. Many small telephone companies: 22.

For further information, contact
Bob Friedman
Arkansas Public School Computer Network
#4 State Capitol Mall, Room 401A
Little Rock, AR 72201
Bobf@apscn.k12.ar.us
(501) 682-5035

Ann Poteet
Arkansas Department of Education
#4 State Capitol Mall, Room 301A
Little Rock, AR 72201
APoteet@hp.k12.ar.us
(501) 682-4267
Fax (501) 682-4561

[As far as K-12 networks,] the Arkansas Public School Computer Network is the major service provider. Some individual schools are using commercial services like America Online or the post-secondary networks until their APSCN connection is in place.

We are working on several community LAN projects with cable TV providers and fiber LANs with telephone companies. We do not collaborate with any freenet organizations to my knowledge.

APSCN has a loan from the state teacher retirement system for development. An annual operating request using state funds has been submitted to the General Assembly beginning with the 1995-96 fiscal year.

APSCN and the Department of Computer Services have been working with Southwestern Bell on infrastructure development as part of a Public Service Commission overearnings stipulation.

California

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
1,002

Number of school buildings
7,713

Number of K-12 teachers
250,000

Number of K-12 students
5,267,277

Number of students in largest district
639,129

Number of students in smallest district
11

Number of districts that have fewer than 1,000 students
442

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

No state education network is in place, although information is being provided via the Internet. California legislative information is available via the Internet on a Gopher server. State Department of Education information is available via the Department's Gopher. California Basic Educational Data (demographics) and information from the Healthy Start/Healthy Kids Office will soon be available via the Internet.

State Gopher server or Mosaic home page address **Yes**
California State Gopher.

K-12 Gopher server or Mosaic home page address
Information unavailable at this time.

See Additional Information

Technology Plans

Long range planning for telecommunications incorporated into state technology plans **No**
No, although Governor Wilson has convened an Information Technology Council that will be considering statewide technology issues, including those of education.

Long range planning for telecommunications incorporated into state K-12 plans **Yes**
These plans are identified in the K-12 Network Technology Planning Guide. They are being developed further by the Golden State Education Network-Communications Task Force.

Goals 2000 planning committee established **No**
Team not selected at this time.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**

Funding for Educational Networks

Funding sources available

Local District

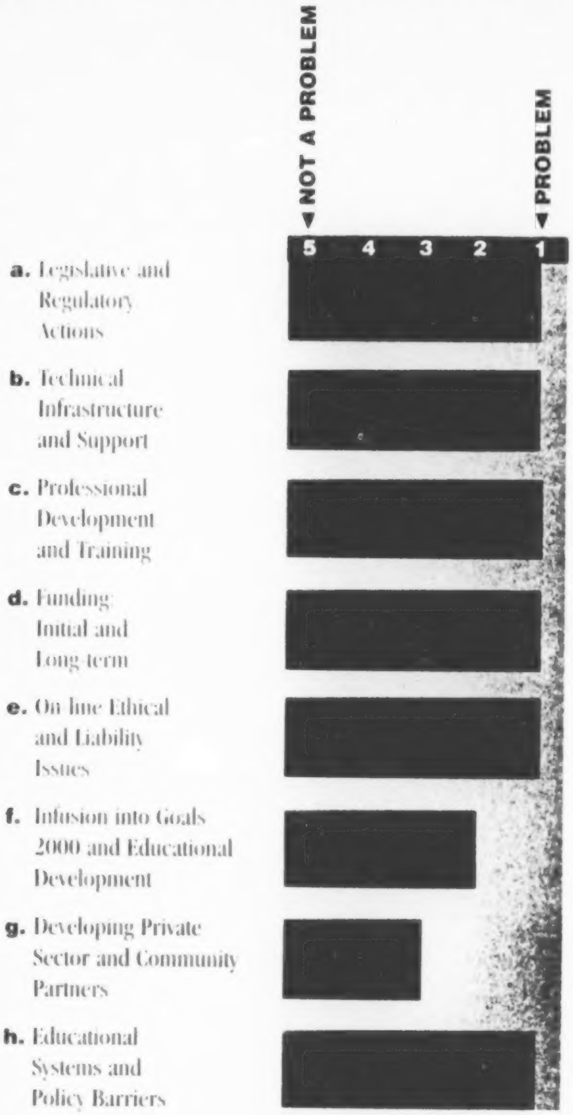
State (Planned)

Other
The California Public Utilities Commission has made $40 million available for K-12 schools that can be used mainly for infrastructure, but also for staff development and applications development. This is on hold due to protests to the ruling.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Pacific Bell and GTE.
See Additional Information.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

California is in a prime position to develop school networks and have Internet access made available to most areas of the state. One of the major problems is the lack of funding from the state that would permit statewide planning and implementation to occur. What exists now are many individual districts, schools, and county offices of education that are working independently to bring communications into the classroom. But there is no consistent overriding plan that directs and supports a statewide effort.

The Department recently published the *K-12 Network Technology Planning Guide* that addresses issues of local infrastructure planning, staff development, technical support, and benefits to educational reform.

Networking issues or obstacles related to population distribution

California is faced with a diverse school population that is increasing in mainly urban areas but also in rural areas. Considerations of equity are a critical concern, but are difficult to address because of the lack of low-cost telco services in many areas of the state. This issue is being addressed through discussions with the CPUC, the Legislature, major industry, and the Governor's Office.

Other concerns about telecommunications

No response was provided.

For further information, contact

Carole Teach for Bill Padia
California Department of Education
Research, Evaluation and Technology Division
721 Capitol Mall, 4th floor
Sacramento, CA 95814
bpadia@cde.ca.gov or cteach@goldmine.cde.ca.gov
(916) 657-2757
Fax (916) 657-4978

Community networks or freenets established in the state **Yes**

A number of community networks are under development throughout the state.

They collaborate with the State Department of Education **Yes**

Some of the community network planners collaborate with the department.

At the present time California is not developing a specific K-12 network. Rather, the California Department of Education is planning for district-county office of education wide area network connectivity to existing network service providers. The Golden State Education Network-Communications Task Force is assisting in the planning. We are looking at deploying frame relay that would be accessible to all education institutions and libraries within county service regions. CSUNet has deployed frame relay in some LATAs of the state and the Sacramento County Office of Education has also deployed frame relay within its county service region. LATAs and county service regions have fairly close overlap.

Infrastructure Building Pacific Bell has established the CalRen and Education First Initiatives. CalRen offers to business and education free phone lines for two years for delivery of specific applications. It includes ISDN, frame relay, and ATM. The Education First Project provides services to a limited number schools and libraries, including ISDN deployment, inside wiring for one classroom, reduced rates for hardware, and consulting.

The GTE-California Education Initiative will provide free consulting services and "education credits" of $2,000 per school to 2,227 public K-12 schools, community colleges, and public libraries in California, giving them access to the information superhighway.

BEST COPY AVAILABLE

Colorado

CO STATE FACTS

Status of State Networks: **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Number of school districts
176

Number of school buildings
1,360

Number of K-12 teachers
33,419

Number of K-12 students
612,635

Number of students in largest district
81,311

Number of students in smallest district
41

Number of districts that have fewer than 1,000 students
113

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
Library information databases: Access Colorado Library Information Network (ACLIN).

State Gopher server or Mosaic home page address — **Yes**
teal.csn.org. Log-on is "ac" for library access.

K-12 Gopher server or Mosaic home page address — **Yes**
Poudre School District R-1, Fort Collins
alpha.pr1.k12.co.us (Gopher)
http://alpha.pr1.k12.co.us (Mosaic)

Boulder Valley School District, Boulder
bvsd.k12.co.us (Gopher)

Community networks or freenets established in state *See Additional Information* — **Yes**

They collaborate with the State Department of Education — **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans — **Yes**
See Additional Information

Long-range planning for telecommunications incorporated into state K-12 plans — **Yes**
We are currently developing a long-range plan for educational technology; telecommunications will have a major place in it.

Goals 2000 planning committee established — **No**
The committee has not yet been appointed by the Governor and Chief State School Officer.

Intermediate educational units are available to assist schools with training for telecommunications implementation — **Yes**
We have voluntary membership BOCES, but they don't currently have expertise in this field. The State Library, through ACLIN, has about 75 Super Trainers to train/assist with library access.

Funding for Educational Networks

Funding sources available

Local District

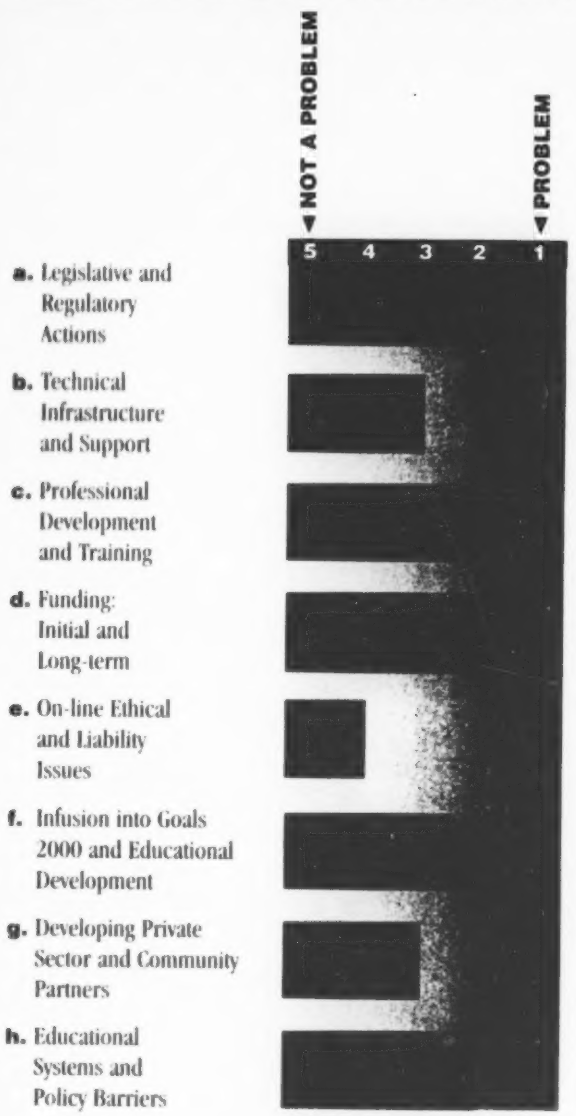
State (Planned)

Other
Corporate grants; partnerships with for-profits through Colorado SuperNet; federal, US WEST Foundation and Annenberg grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission — **No**

A major telecommunications provider has a program encouraging infrastructure development in the state — **Yes**
US WEST and the independent telcos are currently upgrading all existing mechanical switches to digital, eliminating all multiparty service, upgrading general telephone service, and laying optical fiber when additional capacity is needed. Several of these are under PUC programs.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

Development of state-of-the-art telecommunications services (ISDN, call forwarding, etc.) in rural Colorado is a major problem. Additionally, there are no plans to expand these services to the rural areas.

Networking issues or obstacles related to population distribution

Computing expertise in rural areas is scarce—funding is limited. How to make network economically viable in the long-term, given low population areas and in the more densely populated, low SES inner city.

Other concerns about telecommunications

Lack of federal vision and policy to support and expand K-12 networking. Insuring that bandwidth is as affordable as processing power.

For further information, contact

Eric Feder
Colorado Department of Education
201 East Colfax
Denver, CO 80203
efeder@csn.org
(303) 866-6859
Fax (303) 830-0793

Identified and rated another Potential Barrier to State Networks

Lack of phone lines in schools	1

The Colorado Advanced Technology Institute (CATI) sponsors the Colorado Rural Telecommunications Project. Under this program, 12 rural communities are developing and about to implement telecommunications-based economic development and/or educational projects. While Denver FreeNet's main emphasis is on health issues (it is based at the School of Nursing at the University of Colorado), it houses a pilot BBS for the Department of Education and participates in several grants we have written and received. Others include the Boulder Community Network, Telluride InfoZone, and the Gunnison Community Network.

Several state agencies, including the Colorado Telecommunications Advisory Commission (TAC), are independently and yet cooperatively developing statewide telecommunications plans. The Governor has directed the Lieutenant Governor to head a telecommunications initiative. Additionally, the Governor's Office with industry and government partners has applied for a TIIAP planning grant.

Connecticut

STATE FACTS

Number of school districts
166

Number of school buildings
981 (1991)

Number of K-12 teachers
35,000 (1991)

Number of K-12 students
489,000 (1992-93)

Number of students in largest district
25,000

Number of students in smallest district
739

Number of districts that have fewer than 1,000 students
53

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Now being considered. None are yet operational.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **No**
None in operation.

Technology Plans

Long range planning for telecommunications incorporated into state technology plans **Yes**
Administrative agencies of the state are linked together via a statewide network known as STATENET

Long range planning for telecommunications incorporated into state K-12 plans **Yes**
Now in development. Connecticut has established a Joint Committee on Educational Technology with the mission of developing a statewide educational technology plan.

Goals 2000 planning committee established **No**
Not yet formed. Currently being established.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
See Additional Information

Funding for Educational Networks

Funding sources available

Local District

State (Planned)

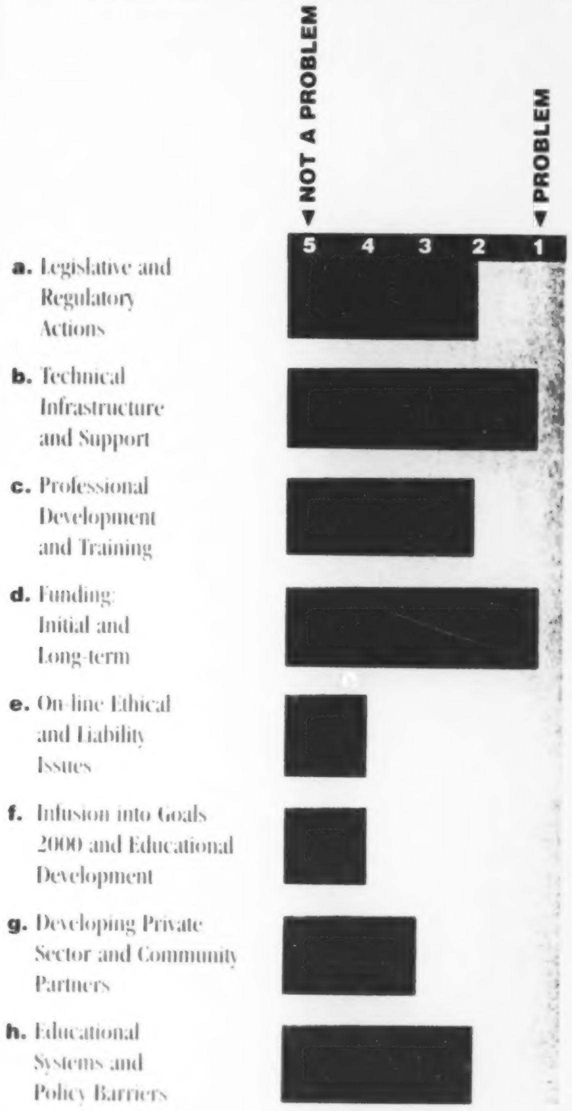
Other
Schools are dependent upon local funding and support. "Other" includes school partnerships with corporations, federal and state grants for schools, and corporate grant opportunities.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
SNET, the local telephone company has announced plans to construct I-SNET, a high bandwidth network over the next 1[illegible] years.

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

None apparent.

Networking issues or obstacles related to population distribution

Connecticut has long been recognized as having two Connecticuts: the haves and the have-nots. Since schools are dependent upon the local community for technology, the opportunities for technology are directly tied to the local tax base. In the state, we are challenged with urban environments such as Hartford, Bridgeport, and New Haven, but we also must deal with rural low-income areas that cannot provide the technology resources needed for educational system.

Other concerns about telecommunications

- National standards for student achievement—i.e., what should students be expected to know or be able to do after 12 years in high school with regard to telecommunications and technology?
- In addition to the need for access to telecommunications (a statewide network, building distribution, etc.), schools must be able to provide computers and other related hardware if students are to effectively make use of the information superhighway. Where will the support ($$) come from?
- Will the Internet (or future information highway) be able to support the anticipated increased use by schools? How will the Internet be able to handle the increased access requests?
- What will be the impact on schools as a result of deregulation of the telecommunications industry?
- Professional development programs and teacher preparatory programs need to provide more training in using technology.

For further information, contact

See Additional Information

ADDITIONAL INFORMATION

Identified but did not rate several additional Potential Barriers to State Networks

- Lack of local technology support personnel in school districts.
- Building wiring. Distribution within schools does not permit easy access to telecommunications throughout school buildings. The typical number of phone lines in an average school building is four to six, which does not permit access to telecommunications for classroom use.
- Lack of categorical funding for technology and, specifically, telecommunications.
- Local school districts not required to use state funds for any technology.
- Lack of technology standards for school construction/renovation. This issue is currently being addressed by a state-level committee on ed tech standards.
- Awareness level and support by local school administrators: e.g., superintendents, principals, board of education members, parents.

There are two types of agencies that offer support to education:

1) Regional Educational Service Centers with six throughout the state.

2) Cooperative Library Service Units with four throughout the state to support educational library services.

Both receive some state funding but are operated by independent boards.

For further information, contact

Betty Goyette, Connecticut State Dept. of Education
227 Church St., Hartford, CT 06510
(203) 566-6660
Fax (203) 566-5623

Tom Buckley, SNET
227 Church St., 9th Floor, New Haven, CT 06510
BUCKLEY1@BIOMED.MED.YALE.EDU
(203) 771-3115
Fax (203) 865-5198

BEST COPY AVAILABLE

Delaware*

STATE FACTS

Status of State Networks Operational Partially Operational Planned Proposed No Current Plans

DE

Number of school districts
19

Number of school buildings
176

Number of K-12 teachers
6,252

Number of K-12 students
104,321

Number of students in largest district
N/A

Number of students in smallest district
N/A

Number of districts that have fewer than 1,000 students
N/A

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address

K-12 Gopher server or Mosaic home page address

Community networks or freenets established in state

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans

Long-range planning for telecommunications incorporated into state K-12 plans

Goals 2000 planning committee established

Intermediate educational units are available to assist schools with training for telecommunications implementation

Funding for Educational Networks

Funding sources available

Local District

State

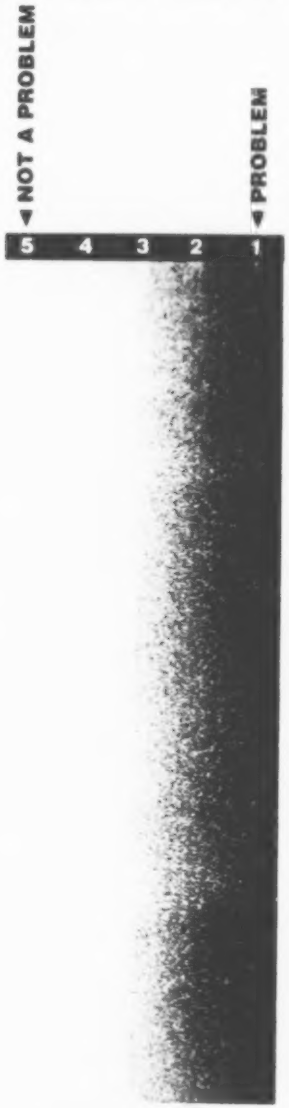
Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission

A major telecommunications provider has a program encouraging infrastructure development in the state

* The data appearing in **State Facts** were published in the *Digest of Education Statistics 1994*, National Center for Education Statistics, U.S. Department of Education, October 1994. They were current fall 1992.

POTENTIAL BARRIERS TO STATE NETWORKS



a. Legislative and Regulatory Actions

b. Technical Infrastructure and Support

c. Professional Development and Training

d. Funding: Initial and Long-term

e. On-line Ethical and Liability Issues

f. Infusion into Goals 2000 and Educational Development

g. Developing Private Sector and Community Partners

h. Educational Systems and Policy Barriers

Networking issues or obstacles related to regional location

Networking issues or obstacles related to population distribution

Other concerns about telecommunications

For further information, contact

Florida

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

FL

Number of school districts
67

Number of school buildings
2,700

Number of K-12 teachers
115,000

Number of K-12 students
2,200,000

Number of students in largest district
370,000

Number of students in smallest district
980

Number of districts that have fewer than 1,000 students
1

Network Development

Information services currently provided by state network.

Legislative

Public Utility Commission
Public Service Commission

State Department of Education

Other
See Additional Information

State Gopher server or Mosaic home page address **Yes**
gopher.firn.edu

K-12 Gopher server or Mosaic home page address
Possibly, but not sure.

Community networks or freenets established in state **Yes**
Currently, there are three operational freenets in the state. The Tallahassee Freenet has been in operation for approximately 18 months. The others have been operational for only a couple of months. There are five or six other freenets under development in the state.

See Additional Information

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**
There have been some discussions, but I'm not aware of a statewide plan.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **Yes**
The Florida Department of Education appoints the state's Goals 2000 team.

Telecommunications contact
Bill Schmid

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**
FIRN, however, provides telecommunications trainers (FIRNTEC's) who supports K-12 education and their use of FIRN.

Funding for Educational Networks

Funding sources available

Local District

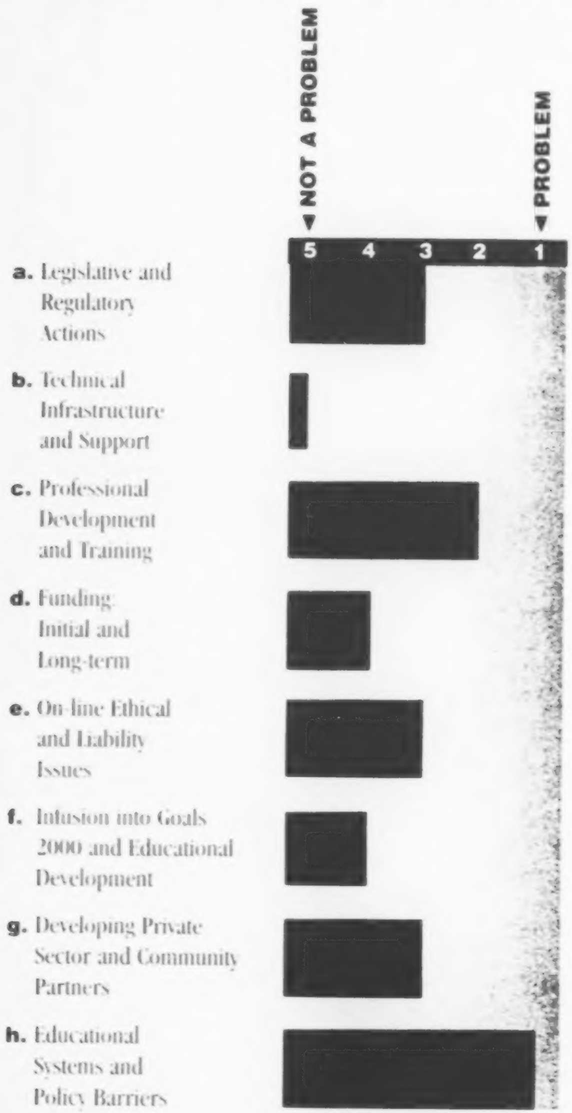
State (Planned)

Other
Federal grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Not within the state but within a district. Sprint/Centel is offering Internet access to approximately 20 schools at no cost during the first year. They plan to offer an attractive access rate after the first year.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Currently, there are no major issues or obstacles related to regional locations in Florida.

Networking issues or obstacles related to population distribution
Currently, there are no major obstacles, but future applications will require bandwidth that might not be available in rural areas. Although this is not a issue today, we will want to be proactive to insure that it will not be a problem in the future.

Other concerns about telecommunications
With all the talk of National Information Infrastructure and privatizing the Internet, how can we protect our investment and insure K-12 access to the Internet remains affordable?

For further information, contact
Bill Schmid
Florida Information Resource Network (FIRN)
325 W. Gaines St., B1-14
Tallahassee, FL 32399
schmidb@mail.firn.edu
(904) 487-8656
Fax: (904) 488-3691

ADDITIONAL INFORMATION

Freenets collaborate with the State Department of Education **Yes**
FIRN has and will continue to collaborate with each of the freenets.

The state's educational network, the Florida Information Resource Network (FIRN), is fully operational. The state's educational network provides legislative and Department of Education information, including the State University System and the Division of Community Colleges.

Currently, the Florida Information Resource Network (FIRN) provides Internet access for K-12 education. FIRN's TCP/IP backbone has a collaborative agreement with SURANET. By October 1994, FIRN will have 11 major Internet nodes and 37 subnodes. Four of the major nodes are owned by SURANET.

Georgia*

STATE FACTS

Status of State Networks — **Operational** — **Partially Operational** — **Planned** — **Proposed** — **No Current Plans**

GA

Number of school districts	**182**
Number of school buildings	**1,932**
Number of K-12 teachers	**75,602**
Number of K-12 students	**1,235,304**
Number of students in largest district	**81,486**
Number of students in smallest district	**173**
Number of districts that have fewer than 1,000 students	**12**

* Two respondents from Georgia completed surveys. Their responses to questions have been combined and their barrier ratings are marked A and B.

87

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Gopher, Mosaic, FTP, News.

State Gopher server or Mosaic home page address **No**
Plans for a statewide network are being prepared. There is not yet a separate server for K-12. The libraries (a part of K-12) use the PeachNet Gopher at Gopher.PeachNet.Edu.

K-12 Gopher server or Mosaic home page address **No**
Not that we are aware of.

Community networks or freenets established in state **Yes**
The Dekalb County freenet does not directly cooperate with the K-12 community but is helpful when asked. The Georgia College Education Network (GCEduNet) project operates to benefit K-12.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
See *Additional Information*

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**
The University System's PeachNet network is expanding to create a single network for education in Georgia.

Goals 2000 planning committee established **Yes**
We have not named the state team yet.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
There are both the traditional Regional Educational Support Agencies, which have provided educational support to the school districts, and the new Georgia Department of Education Technology Training Centers, which will focus on technology.

Funding for Educational Networks

Funding sources available

Local District

State (Planned)

Other
The lottery.

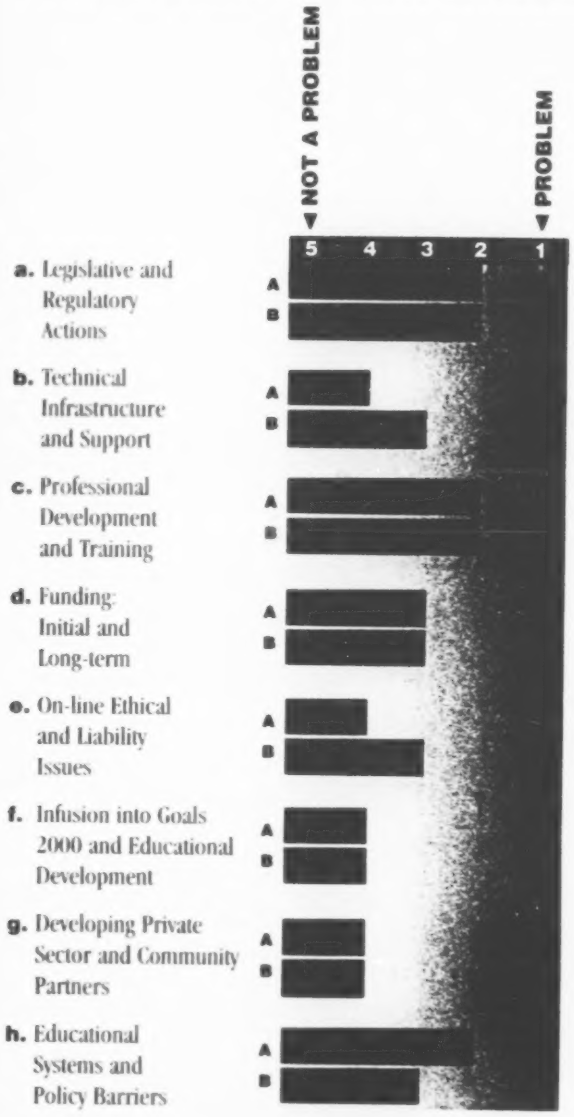
Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**
One has been requested but there has been no action.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
The Department of Administrative Services—extensive backbone structure.
See Additional Information.

BEST COPY AVAILABLE

88

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

The telephone companies do not have digital transport facilities at many of the rural locations and they have not offered to backhaul the data at a reasonable cost. This can work a hardship on the smaller rural school districts that most need the help from technology.

Networking issues or obstacles related to population distribution

The people who are keeping pace with the rapid changes in technology are located in the population centers of the state. This means that the required support people are not always available in the portions of the state that would most benefit by the infusion of technology.

Other concerns about telecommunications

Ongoing cost and its acceptance by school sites.
See Additional Information

For further information, contact

Bailey Mitchell
Georgia Department of Education
1752 Twin Towers East
Atlanta, GA 30334
bmitchell@mordred.gatech.edu
(404) 657-8778
Fax (404) 657-6822

Jerry W. Segers
Regents Telecommunications and Networking
P.O. Box 444
Marietta, GA 30061
Jerry@PeachNet.Edu
(404) 423-6860
Fax (404) 423-6868

ADDITIONAL INFORMATION

The Board of Regents for the University System and Department of Administrative Services both have extensive connectivity. The DOAS is developing and implementing an expansion of their existing SNA network to add the TCP/IP protocols and add connections to all state agencies. This activity is coordinated with and in cooperation with the University System and PeachNet's activities for education. The two networks are currently interoperable. Many of the colleges and universities have Gopher and Mosaic servers.

I have three major concerns about telecommunications technology:

- With immediate impending improvements in communications technology, will people be able to adjust to the infusion of new ideas into their lives and activities? For example, relatively sheltered rural communities will suddenly have access to other religious, political, and sexual views (to name three hot areas in the South). I am afraid the adjustment will be difficult.
- Can the education system find a way to pay for the bandwidth that will be required to make significant improvements in education in rural areas? The present tax system seems unsuited for the task.
- Can the 35 local telephone companies in the state along with cable companies, long distance carriers, and other providers cooperate in constructing the facilities education will need at a cost education can afford, or will it fall to the state to create the infrastructure with public funds?

Hawaii

STATE FACTS

Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Number of school districts
1

Number of school buildings
3,900

Number of K-12 teachers
11,513

Number of K-12 students
180,000

Number of students in largest district
180,000

Number of students in smallest district
180,000

Number of districts that have fewer than 1,000 students
0

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
Hawaii FYI.

State Gopher server or Mosaic home page address **Yes**
kalama.doe.hawaii.edu (128.171.48.20) (Gopher) http://www.kalama.doe.hawaii.edu (Mosaic)

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**
There is Hawaii FYI, a public information provider. There is some collaboration with the Hawaii FYI and the Department of Education to provide information service to the schools.

They collaborate with the State Department of Education **Yes**

Technology Plans

Long range planning for telecommunications incorporated into state technology plans **Yes**
The Department of Education's telecommunications plan is an integral part of the state's telecommunications plan and the state's Institutional Network plan.

Long range planning for telecommunications incorporated into state K-12 plans **Yes**
The telecommunications and network plans are incorporated in the state's education plan.

Goals 2000 planning committee established **Yes**
Members are employees of the Department of Education and community members.

Telecommunications contacts
Sharon Arakaki, K. Kim

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**
There is no intermediate educational unit between the schools and the State Department of Education.

Funding for Educational Networks

Funding sources available

Local District

State (Planned)

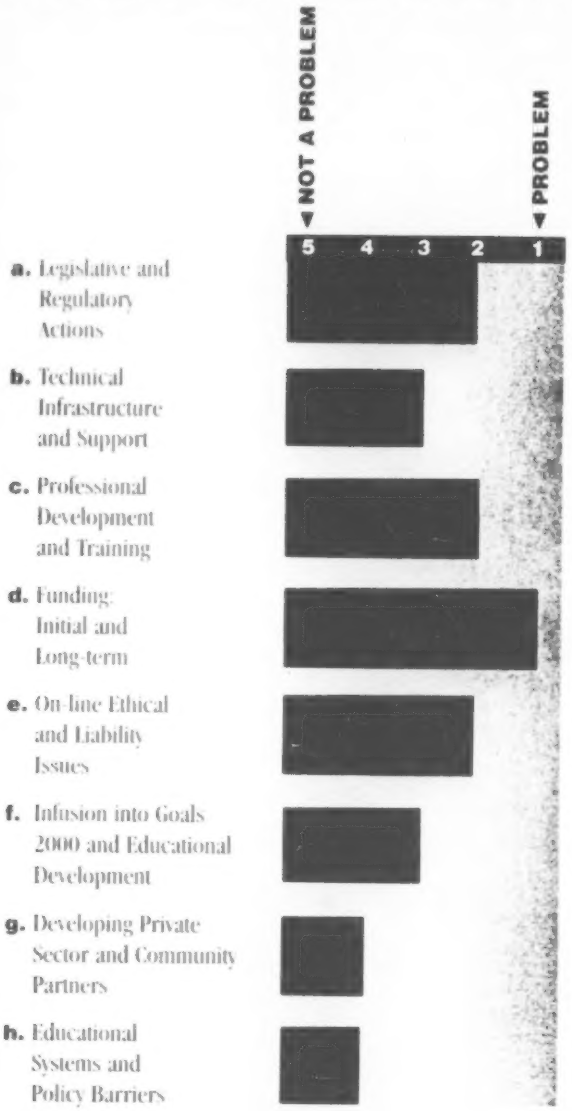
Other
Federal grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**
There is no special telecommunications tariff for education in Hawaii.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
See Additional Information

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

There is a limited number of network service providers in Hawaii; therefore, the low competition in network services tends to keep the telecommunications costs fairly expensive. Working and coordinating with several different telecommunication providers for installation of the Institutional Network has been challenging. Availability of some of the advanced network technologies from the major network providers in Hawaii sometimes lags.

Networking issues or obstacles related to population distribution

Some schools in the remote rural areas of the neighbor islands, such as the islands of Molokai, Hawaii, and Maui, are not served by the major telecommunications providers for high-speed digital networks.

Other concerns about telecommunications

Training the users and operators of telecommunication network must be addressed as an important part of the telecommunications planning process for the schools.

For further information, contact

Sharen Arakaki
K. Kim
Department of Education, State of Hawaii
1390 Miller St.
Honolulu, HI 96813
sharen@kalama.doe.hawaii.edu
(808) 733-4733
kkim@kalama.doe.hawaii.edu
(808) 586-3211
Fax (808) 586-3227

ADDITIONAL INFORMATION

We have one school district. The State Department of Education is the school district for public schools in the state of Hawaii.

We have a statewide, protocol-independent, wide area data network that connects all schools and offices in the state to the computer hosts.

The state has embarked on building the Institutional Network (I-Net) primarily from the agreement on cable TV franchises. The I-Net will be based on SONET and other fiber optic network and Ethernet over CATV technology. Our goal is to connect all schools to the I-Net. GTE Hawaiian Tel has started implementing a so-called "worldclass network" that will provide frame relay service, SMDS, ATM service, and some video applications.

Idaho

STATE FACTS

ID

Number of school districts
112

Number of school buildings
650

Number of K-12 teachers
12,015

Number of K-12 students
236,774

Number of students in largest district
26,099

Number of students in smallest district
10

Number of districts that have fewer than 1,000 students
59

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Network Development

Information services currently provided by state network.

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
N/A. No present state network.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **No**
Idaho does not have one.

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

State (Planned)

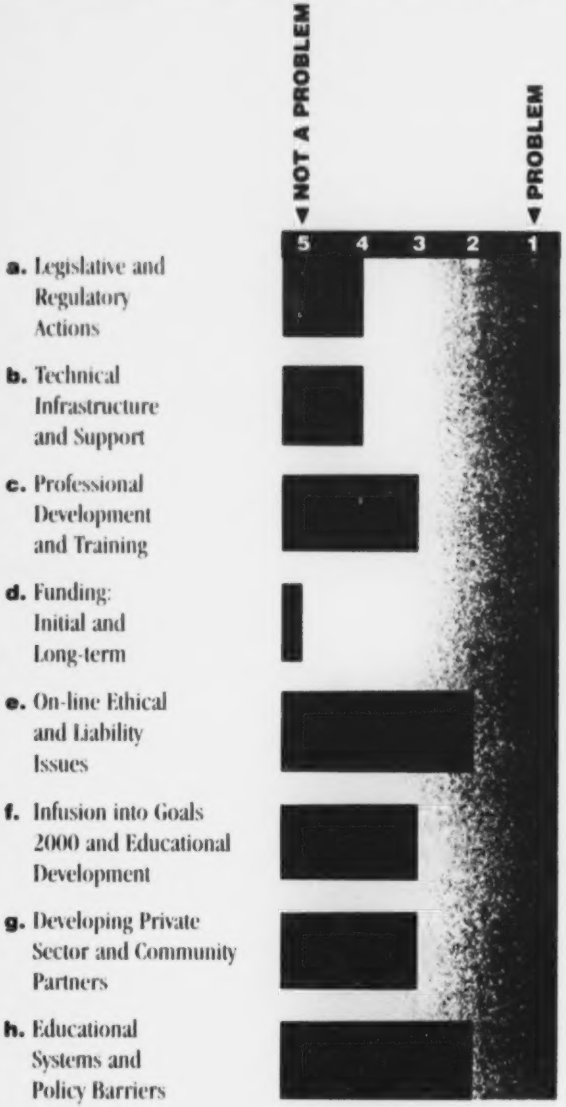
Other
The state grant program for 1994-95 equals $10 million.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Idaho is geographically challenged. The state spans two LATAs for purposes of telecommunications. Much of the state is too far removed from the major metropolitan areas.

Networking issues or obstacles related to population distribution
Idaho is mostly rural and has a need for greater technology implementation.

Other concerns about telecommunications
N/A.

For further information, contact
Robert (Bob) Pyle
Idaho Public Television-Learning Link
1455 N. Orchard
Boise, ID 83706
bobpyle@idptv.idbsu.edu
(208) 373-7220
Fax (208) 373-7245

Illinois

STATE FACTS

Status of State Networks Operational Partially Operational Planned **Proposed** No Current Plans

Number of school districts
921

Number of school buildings
4,151

Number of K-12 teachers
110,874

Number of K-12 students
1,883,892

Number of students in largest district
409,499

Number of students in smallest district
24

Number of districts that have fewer than 1,000 students
515

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **Yes**
isbe.state.il.us

K-12 Gopher server or Mosaic home page address **No**
Not available

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **No**
Not yet

Technology Plans

Long range planning for telecommunications incorporated into state technology plan
In progress

Long range planning for telecommunications incorporated into state K-12 plan
In progress

Goals 2000 planning committee established **No**
The Goals 2000 planning committee for Illinois has not been named yet.

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**
Not yet. Our intermediate educational units are being reorganized. It is planned to have these services provided by the new structure.

Funding for Educational Networks

Funding sources available

Local District

State (Planned)

Other

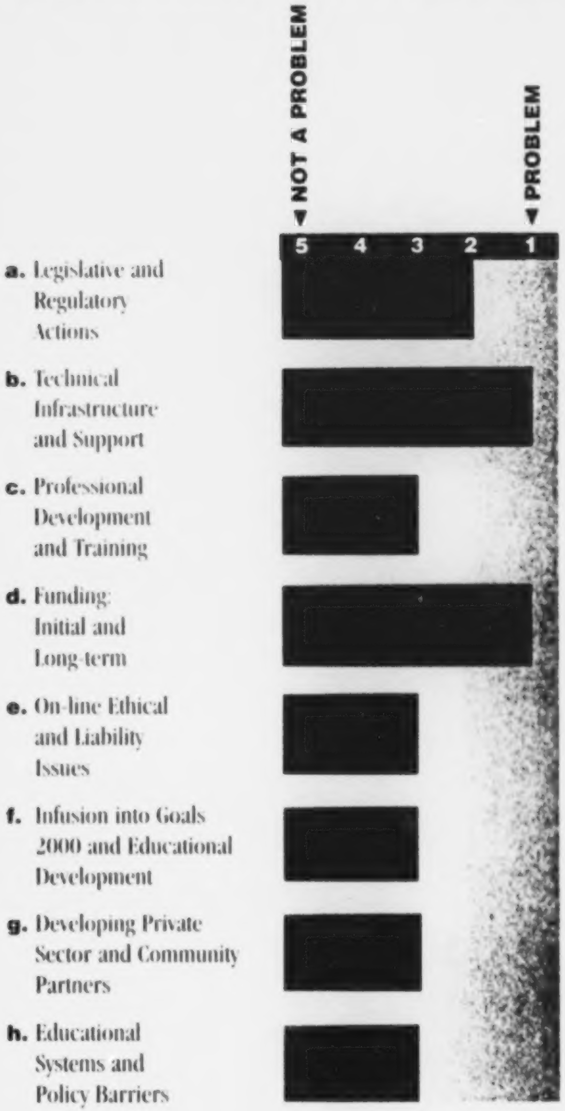
Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

99

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
This state is divided into over 14 separate LATAs.

Networking issues or obstacles related to population distribution
One-half of the student population is located in Chicago and its surrounding areas. Equity between urban and rural is an issue.

Other concerns about telecommunications
No response was provided.

For further information, contact
Frank Whitney
Illinois State Board of Education
100 N. First St., S395
Springfield, IL 62777
fwhitney@eagle.sangamon.edu
(217) 782-4313
Fax (217) 782-4550

Indiana

IN

STATE FACTS

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Number of school districts	**294**
Number of school buildings	**1,903**
Number of K-12 teachers	**55,218**
Number of K-12 students	**960,434**
Number of students in largest district	**46,656**
Number of students in smallest district	**220**
Number of districts that have fewer than 1,000 students	**43**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Other state agency data.

State Gopher server or Mosaic home page address **Yes**
ideanet.doe.state.in.us (Gopher)
http//ideanet (Mosaic)

K-12 Gopher server or Mosaic home page address **No**
Not yet, but within one month.

Community networks or freenets established in state **Yes**
Access Indiana.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans
In process.

Long-range planning for telecommunications incorporated into state K-12 plans
In process.

Goals 2000 planning committee established **No**

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Education Service Centers will be the primary trainers for teachers.

Funding for Educational Networks

Funding sources available

Local District

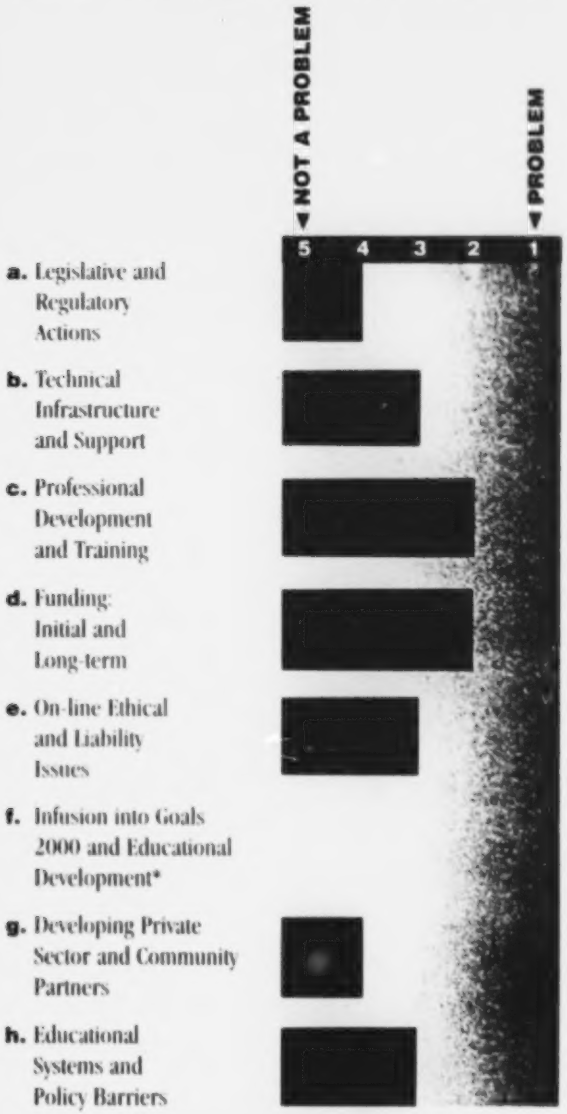
State (Planned.)

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Opportunity Indiana through Ameritech.

POTENTIAL BARRIERS TO STATE NETWORKS



* No rating provided by respondent.

Networking issues or obstacles related to regional location
No response was provided.

Networking issues or obstacles related to population distribution
No response was provided.

Other concerns about telecommunications
No response was provided.

For further information, contact
Mike Huffman
Department of Education, State of Indiana
Room 229, State House
Indianapolis, IN 46204-2798
mhuffman@ideanet.doe.state.in.us
(317) 232-0808
Fax (317) 233-6326

Iowa

STATE FACTS

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

IA

Number of school districts
397

Number of school buildings
1,956

Number of K-12 teachers
32,236

Number of K-12 students
497,040

Number of students in largest district
30,372

Number of students in smallest district
51

Number of districts that have fewer than 1,000 students
285

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **Yes**
IOWA Database, Mosaic, URL address: http://192.217.170.20/

K-12 Gopher server or Mosaic home page address
No response was provided.

Community networks or freenets established in state
No response was provided.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established
The Goals 2000 team members will be appointed by the Governor and the Director of the Iowa Department of Education by December 1, 1994.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Iowa has 15 Area Education Agencies. Iowa's three public universities (University of Iowa, University of Northern Iowa, and Iowa State University) are also providing preservice and inservice training.

Funding for Educational Networks

Funding sources available

Local District

State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
The Iowa Telecommunications and Technology Commission (ITTC) was established during the 1994 Iowa legislative session. This three-member commission supervises the management, development, and operation of the state's fiber optic network, the Iowa Communications Network (ICN). The ITTC has the authority to set fees for the ICN. Currently, educational video rates are $5 per hour per site. Information on the rates is not available electronically.

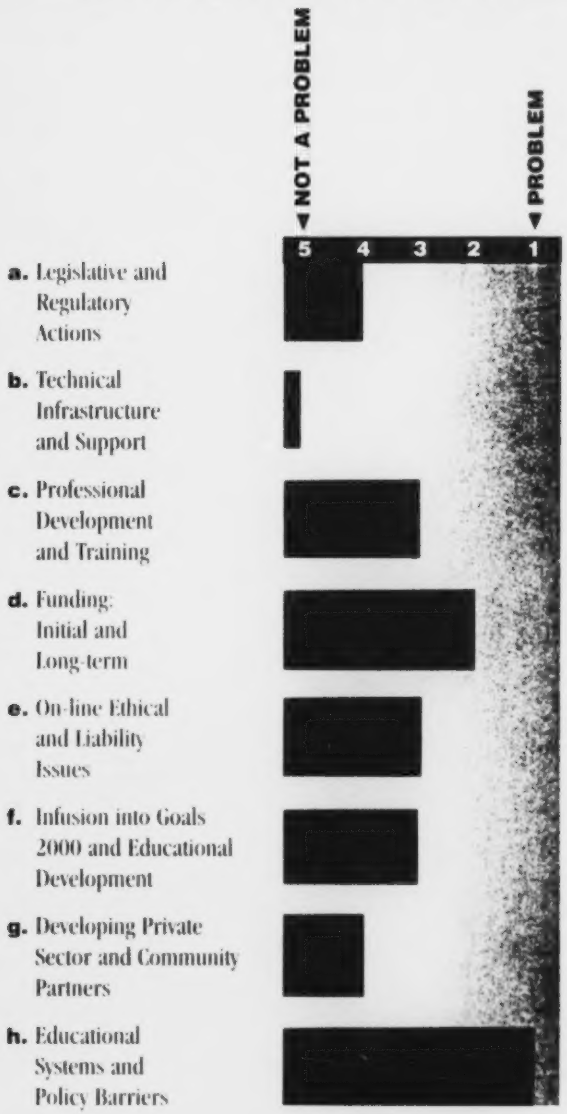
A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Iowa Communications Network (ICN)
See Additional Information

107

BEST COPY AVAILABLE

108

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
No response was provided.

Networking issues or obstacles related to population distribution
No response was provided.

Other concerns about telecommunications
No response was provided.

For further information, contact
Ted Stilwill
Iowa Department of Education
Grimes State Office Building
Des Moines, IA 50319
(515) 281-3333
Fax (515) 242-5988

BEST COPY AVAILABLE

ADDITIONAL INFORMATION

In 1989, Governor Terry Branstad proposed, and Iowa lawmakers adopted, legislation that would create the Iowa Communications Network (ICN). The ICN is a statewide, two-way, full-motion, interactive, fiber optic telecommunications system.

Construction began in 1991 on the backbone of the ICN, which connected distance education classrooms in each of Iowa's 99 counties as well as the three public universities and Iowa Public Television. These original 103 sites were located at 52 public school districts, 43 sites in Iowa's 15 merged area community college regions, two of the 15 Area Education Agencies (AEA), and two independent colleges. Transmission of classes over the ICN began in August 1993. During the 1993-94 school year, approximately 20 independent colleges and universities initiated plans to connect to the ICN. Additionally, a Request For Proposals (RFP) was released in August 1994 to begin the process of adding about 500 more sites to the ICN, thereby connecting every school district within the state, the remaining AEAs, and selected public libraries.

No one within the Iowa Department of Education has responsibility for K-12 computer networking. Educational applications on the state's fiber optic network are coordinated by Iowa Public Television.

Kansas

STATE FACTS

Number of school districts	**304**
Number of school buildings	**1,485**
Number of K-12 teachers	**30,282**
Number of K-12 students	**457,744**
Number of students in largest district	**47,132**
Number of students in smallest district	**90**
Number of districts that have fewer than 1,000 students	**148**

KS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
Information Network of Kansas (INK).
See Additional Information

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**
I do not know of any schools that have a Gopher or Mosaic home page.

Community networks or freenets established in state **Yes**
Sunflower FreeNet. Not collaborating with the State Department of Education at this time.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**
The state legislature recently appointed a Telecommunications Strategic Planning Committee to do this.

Long-range planning for telecommunications incorporated into state K-12 plans **No**
Not at this time. The Goals 2000 Technology Planning Committee will probably be addressing this.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Jerry Niebaum and Scott Clatterbuck of the Goals 2000 Technology Planning Committee.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
There are 12 regional education service centers in Kansas. Some staff may be available to assist with training related to telecommunications implementation if they have the expertise. Most would have to be trained first.

Funding for Educational Networks

Funding sources available

Local District

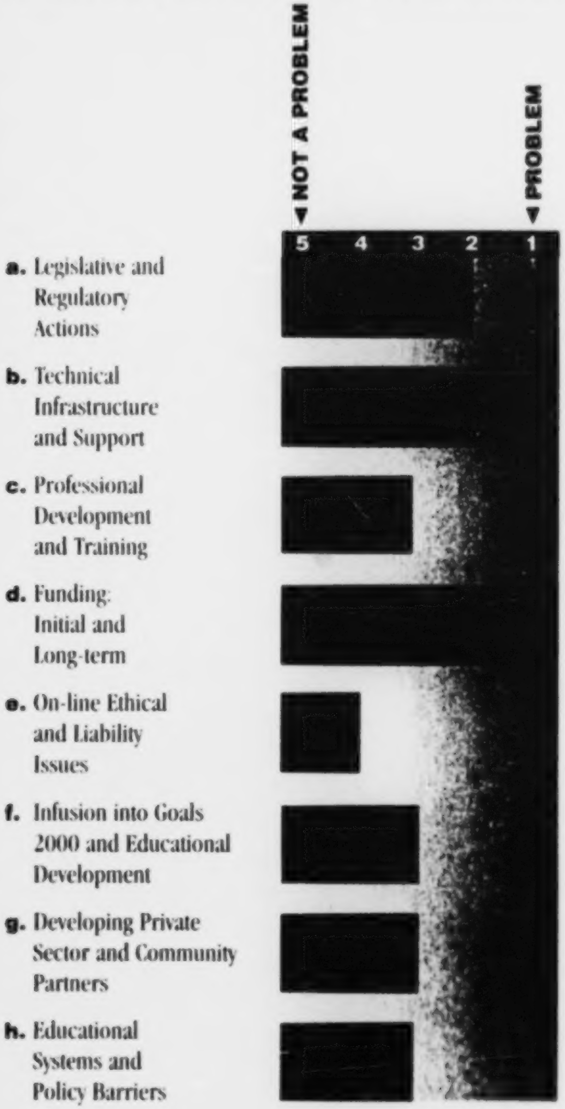
State

Other
Grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
The Kansas Corporation Commission (KCC), the state agency and governing body for the telecommunications industry, has worked with businesses, educators, medical professionals, and state officials since 1989 on interactive video and approved the telecommunications transmission of the distance learning school clusters. The KCC is currently... establishing a tariff for the Southwestern Bell Telephone distance learning network.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
The Kansas Research and Education Network.
See Additional Information

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Kansas is 82,000 square miles.

Networking issues or obstacles related to population distribution
Most of the population of Kansas is situated in the eastern part of the state. There is a number of rural school districts where the distances are great.

Other concerns about telecommunications
Most schools lack basic telephone service to classrooms. The task of wiring buildings will be enormous, not to mention establishing local area networks in schools.

For further information, contact
Denise Moore
Kansas State Board of Education
120 E. 10th St.
Topeka, KS 66612
dmoore@smtpgw.ksbe.state.ks.us
(913) 296-1230
Fax (913) 296-7933

ADDITIONAL INFORMATION

The Information Network of Kansas (INK) was created by the 1990 Legislature to provide electronic access of public information to Kansas businesses and citizens on an on-line computer network. INK provides legislative, bank, legal, insurance, business and commercial, library, state-agency, local government, and children's information services. A special section of INK, the Kansas Education Network, is dedicated to the support of public education. It provides educators and students electronic access to INK's many information services, plus a continually growing list of educational applications,...INK also provides e-mail and Internet access.

As a result of recent legislation, Southwestern Bell will be constructing a statewide fiber-based distance learning network. This network will initially provide on-request, two-way interactive video for schools in its service areas. Data communications on these networks will also be possible.

The Kansas Research and Education Network (KANREN) provides direct Internet access through a regional provider for its member educational institutions. Current members include four-year and community colleges. Future expansion of KANREN will include public schools and libraries.

Kentucky

STATE FACTS

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

KY

Number of school districts
176

Number of school buildings
1,375

Number of K-12 teachers
37,000

Number of K-12 students
600,000

Number of students in largest district
100,000

Number of students in smallest district
150

Number of districts that have fewer than 1,000 students
41

Network Development

Information services currently provided by state network.

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Higher education, all state agencies.

State Gopher server or Mosaic home page address	**Yes**
K-12 Gopher server or Mosaic home page address	**No**
Community networks or freenets established in state	**Yes**
They collaborate with the State Department of Education	**Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans	**Yes**
Long-range planning for telecommunications incorporated into state K-12 plans	**Yes**
Goals 2000 planning committee established	**Yes**

Telecommunications contact
Don F. Coffman

Intermediate educational units are available to assist schools with training for telecommunications implementation	**Yes**

Funding for Educational Networks

Funding sources available

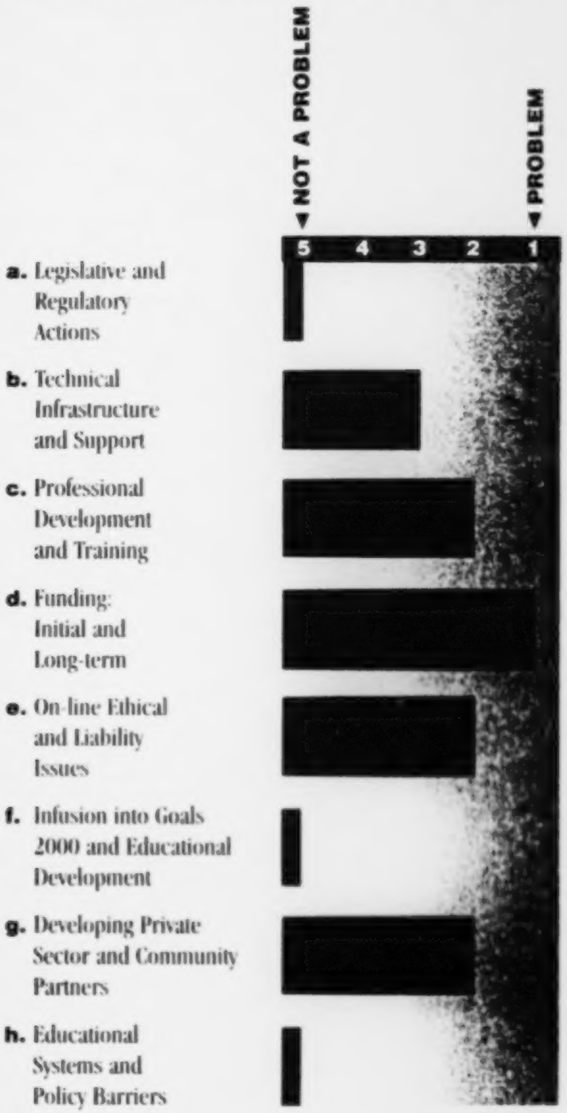
Local District

State

Other
Federal grant.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission	**No**
A major telecommunications provider has a program encouraging infrastructure development in the state	**No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
State is serviced by 20 local exchange carriers, and many of the smaller LECs have inferior service and/or technology.

Networking issues or obstacles related to population distribution
State-of-the-art technology (example: ISDN) available only in large metropolitan areas.

Other concerns about telecommunications
No response was provided.

For further information, contact
Don F. Coffman
Kentucky Department of Education
500 Mero St.
Frankfort, KY 40601
(502) 564-6900
Fax (502) 564-5680

BEST COPY AVAILABLE

Louisiana

STATE FACTS

Number of school districts
66

Number of school buildings
1,444

Number of K-12 teachers
46,000

Number of K-12 students
774,000

Number of students in largest district
86,300

Number of students in smallest district
1,400

Number of districts that have fewer than 1,000 students
0

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

Louisiana's current state education network provides linkages only to the Department of Education. The Department participates in LANET and is encouraging school districts to join. LANET information services support access to university and state agency networks.

State Gopher server or Mosaic home page address **No**

Not for K-12 education. SDE has participated in a state grant proposal to develop information servers across 13 Louisiana governmental agencies, including the legislative and judicial branches.

K-12 Gopher server or Mosaic home page address **No**

Not to our knowledge.

See Additional Information

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans

A state telecommunications plan is being developed. K-12 education has not participated in the development of the state telecommunications plan.

Long-range planning for telecommunications incorporated into state K-12 plans **No**

State plans for K-12 education have not included telecommunications.

Goals 2000 planning committee established **Yes**

Telecommunications contact
None.

Intermediate educational units are available to assist schools with training for telecommunications implementation

Louisiana has regional service centers for K-12 education. Planning, staffing, and funding would be needed for those centers to play a significant role in telecommunications training or implementation.

Funding for Educational Networks

Funding sources available

Local District

State

Other

See Additional Information

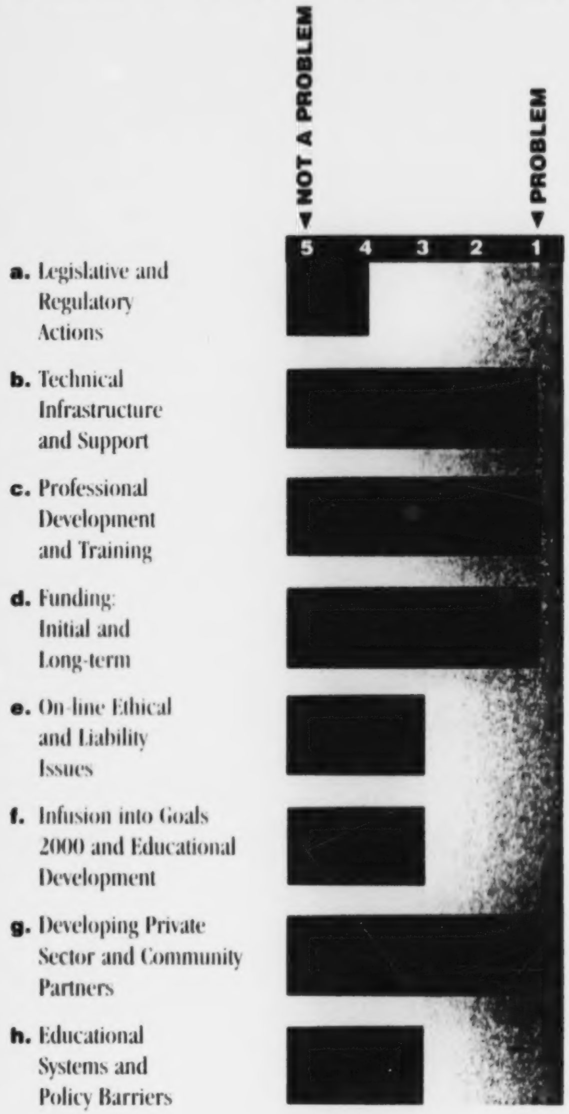
Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**

A 67 percent price reduction for schools and libraries for a distance-insensitive flatrate of $110 per month for 56KBps lines and $358 per month for TI lines, one line per location.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**

BellSouth says statewide support for ISDN access is underway. Also discussing possible demand for ATM switches.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
None.

Networking issues or obstacles related to population distribution
Louisiana's population is concentrated in the southern areas of the state. Rural, suburban, and urban areas have their local issues.

Other concerns about telecommunications
Network access for education is inhibited by our knowledge of (comfort with) networking technologies. The rapid changes in network technologies add to the anxiety of making decisions. Educators express concerns that they are "at the mercy" of technology vendors. Clearinghouses for networking and technology approaches that work in education could assist decisionmakers.

Education plans for networking must integrate administrative and instructional applications. Education cannot afford to build and maintain separate networks.

Telecommunications and technology funding opportunities in Louisiana have been primarily isolated, one-time projects with short-term impact. Local plans, reinforced by a statewide plan, could provide an improved framework for sustained and focused progress.

For further information, contact
Barbara H. Andrepont, Director
Louisiana Department of Education
Bureau of Management Information Systems
3455 Florida Blvd.
Baton Rouge, LA 70806
BAndrepont%ED@mail.doe.state.la.us
(504) 342-0091
Fax (504) 342-1912

ADDITIONAL INFORMATION

Community networks or freenets established in state **Yes**
Freenet efforts are underway in several Louisiana cities. Collaboration is not active with the SDE at this time.

Identified and rated three additional Potential Barriers to State Networks
- K-12 networking projects must compete with other education priorities for funding. 1
- Organization and staffing within and across education must be improved to support statewide networking efforts. 1
- Responsibilities for networking support must be defined and assigned. 1

LA

Status of State Networks
Operational Statewide educational administrative network to school district offices since 1986. State backbone wide area network with Internet connection (LANET) operational since 1993 now serving state agencies, parish libraries, and state universities.
Partially Operational School district, school, and classroom access to LANET/Internet through university (pilots underway).
Planned State technology plan to be developed in Fiscal Year 1994-95. To include educational networking in response to Goals 2000.
Proposed A project for 13 state agencies to design and implement Internet servers.

Current educational networking is supported via two methods. Administrative networking is accomplished through a leased-line SNA network managed by the Department of Education, Bureau of Management Information Systems. Instructional (classroom) networking is accomplished by dial-up and leased-line arrangements for various services through independent projects.

Networking funding is available in some school districts through state tax initiatives. Louisiana has no separate, identifiable state funding for K-12 networks. Louisiana education trust monies and state formula funding can be used to support computer networking. Limited federal education funding is available.

Maine

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

ME

Number of school districts
284

Number of school buildings
739

Number of K-12 teachers
14,222

Number of K-12 students
212,245

Number of students in largest district
7,950

Number of students in smallest district
3

Number of districts that have fewer than 1,000 students
10%

123

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

N/A

State Gopher server or Mosaic home page address **No**
Working on it with University of Maine System.

K-12 Gopher server or Mosaic home page address **Yes**
Address not available.

Community networks or freenets established in state **Yes**
Starting.

They collaborate with the State Department of Education **No**
Not yet.

Technology Plans

Long range planning for telecommunications incorporated into state technology plans **No**
Not yet.

Long range planning for telecommunications incorporated into state K-12 plans **No**
Not yet.

Goals 2000 planning committee established **Yes**

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

1[illegible]4

Funding for Educational Networks

Funding sources available

Local District

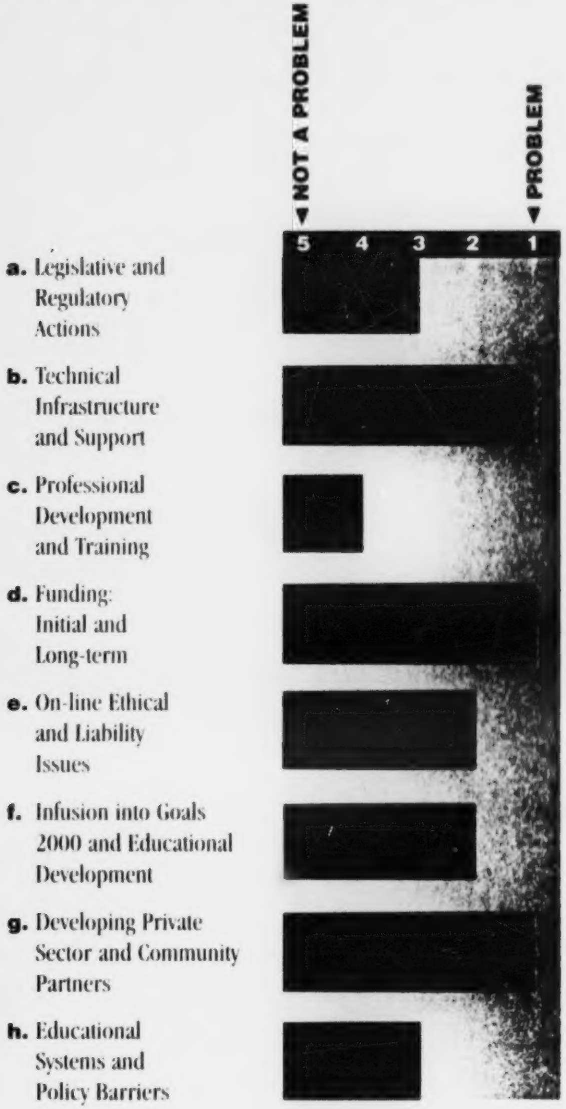
State

Other
Limited.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state
Not yet in place.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Too early to tell.

Networking issues or obstacles related to population distribution
Very rural state; many independent phone companies.

Other concerns about telecommunications
We are just beginning the planning process.

For further information, contact
Richard Riley
Maine Department of Education
State House Station #23
Augusta, ME 04333
K3057 APPlink Internet
(207) 287-5815
Fax (207) 287-5900

135

136

Maryland

STATE FACTS **Status of State Networks** **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
24

Number of school buildings
1,254

Number of K-12 teachers
45,187

Number of K-12 students
772,638

Number of students in largest district
115,918

Number of students in smallest district
2,738

Number of districts that have fewer than 1,000 students
0

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Public library network.

State Gopher server or Mosaic home page address **Yes**

K-12 Gopher server or Mosaic home page address
No response was provided.

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **Yes**

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**

Funding for Educational Networks

Funding sources available

Local District

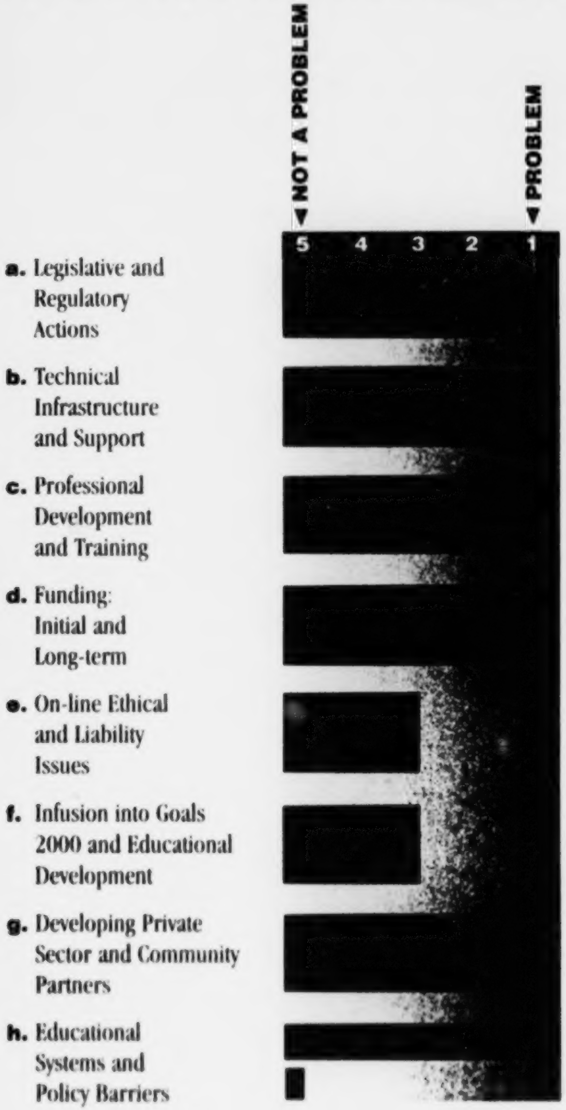
State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
Discount rate for subscribing schools for two-way interactive distance earning applications.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
The special tariff for distance learning.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Maryland has four LATAs. We need to solve the problem of interLATA communication.

Networking issues or obstacles related to population distribution
We have students in both urban and rural settings, as well as students living in neighboring states.

Other concerns about telecommunications
No response was provided.

For further information, contact
Greg Talley
Maryland State Department of Education
200 West Baltimore St.
Baltimore, MD 21201
gtalley@umd5.edu
(410) 333-2632
Fax (410) 333-2026

ADDITIONAL INFORMATION

Identified and rated additional Potential Barriers to State Networks

Educational Systems	1
Policy Barriers	5

A representative of Maryland's telecommunications industry also completed a survey and commented:
Bell Atlantic is deploying video dial tone and constructing a statewide distance learning network.

Other concerns about telecommunications
Both of the situations described as networking obstacles are impacted by the local exchange company's inability to provide service across LATA boundaries.

Massachusetts

STATE FACTS

Number of school districts
436

Number of school buildings
1,782

Number of K-12 teachers
60,000

Number of K-12 students
879,663

Number of students in largest district
60,000

Number of students in smallest district
1

Number of districts that have fewer than 1,000 students
130

Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address
By September 15, 1994.

K-12 Gopher server or Mosaic home page address
By September 15, 1994.

Community networks or freenets established in state **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**
Through Mass Ed Online.

Goals 2000 planning committee established **Yes**

Telecommunications contacts
Greg Nadeau and Connie Louie

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
The Massachusetts Corporation for Educational Telecommunications has been designated by the state to provide the training.

Funding for Educational Networks

Funding sources available

Local District

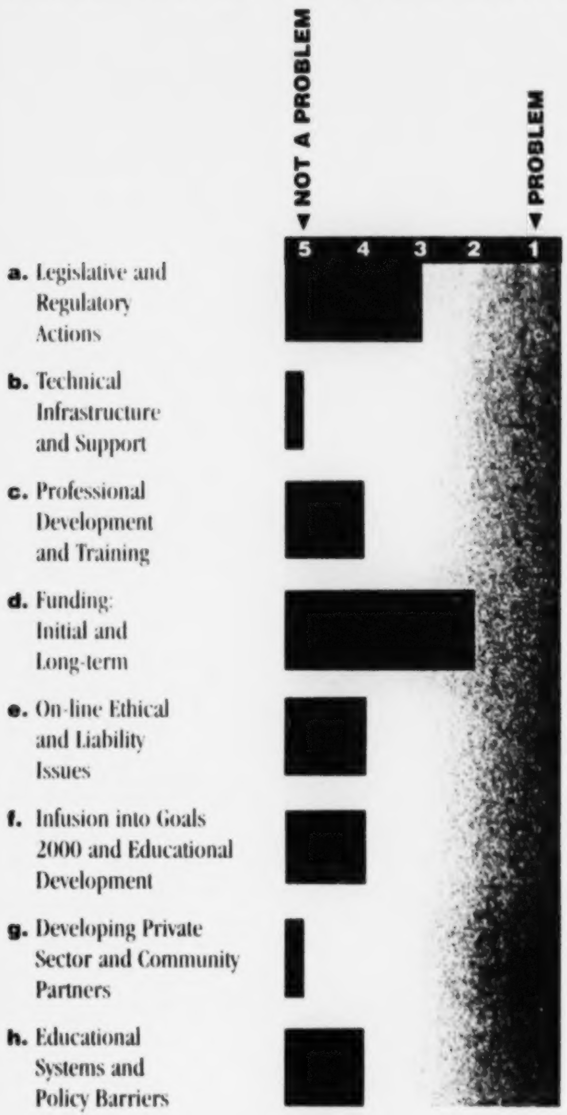
State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
The Massachusetts Corporation for Educational Telecommunications (MCET) is working with the Department to make it happen.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
We are working closely with the Regional Lab.

Networking issues or obstacles related to population distribution
We are trying our best to include the western part of the state. All of our activities have included schools which are in the western part of the state as well as the other parts of the state.

Other concerns about telecommunications
N/A

For further information, contact
Connie Louie
Massachusetts Department of Education
350 Main Street
Malden, MA 02148
clouie@meen.mass.edu
(617) 388-3300 ext. 275
Fax (617) 388-3395

Michigan

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
614

Number of school buildings
3,548

Number of K-12 teachers
85,348

Number of K-12 students
1,581,058

MI

Number of students in largest district
N/A (Detroit)

Number of students in smallest district
N/A

Number of districts that have fewer than 1,000 students
N/A

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **Yes**
gopher.mde.state.mi.us (Gopher)
http://web.mde.staate.mi.us:1024 (Mosaic)

K-12 Gopher server or Mosaic home page address **Yes**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
Being developed.

Long-range planning for telecommunications incorporated into state K-12 plans **No**

Goals 2000 planning committee established **Yes**

Telecommunications contact
James Fitzpatrick

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Yes, 22 Regional Education Media Centers (REMCs).

Funding for Educational Networks

Funding sources available

Local District

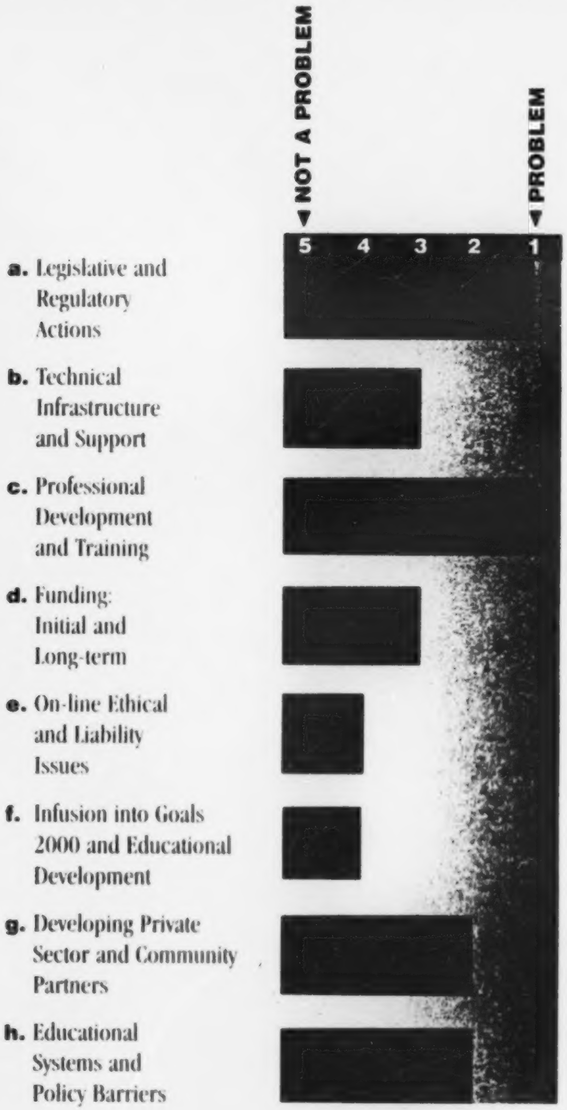
State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Ameritech excess earning rate case.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Dial-in access. Long distance phone calls.

Networking issues or obstacles related to population distribution
No.

Other concerns about telecommunications
No.

For further information, contact
James Fitzpatrick
Michigan Department of Education
P.O. Box 30008
Lansing, MI 48909
fitz@mdenet.mde.state.mi.us
(517) 335-0613
Fax (517) 373-3325

Identified and rated another Potential Barrier to State Networks

Technical Standards	2

Minnesota

STATE FACTS

Status of State Networks — Operational — Partially Operational — Planned — Proposed — No Current Plans

Number of school districts
379

Number of school buildings
1,600

Number of K-12 teachers
50,000

Number of K-12 students
850,000

Number of students in largest district
43,000

Number of students in smallest district
150

Number of districts that have fewer than 1,000 students
250

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
See Additional Information

State Gopher server or Mosaic home page address
Will by November 1, 1994.

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education
In some cases. If "collaborate" is loosely defined, yes.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans
By April 1, 1995.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Mark Manning

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**

Funding for Educational Networks

Funding sources available

Local District

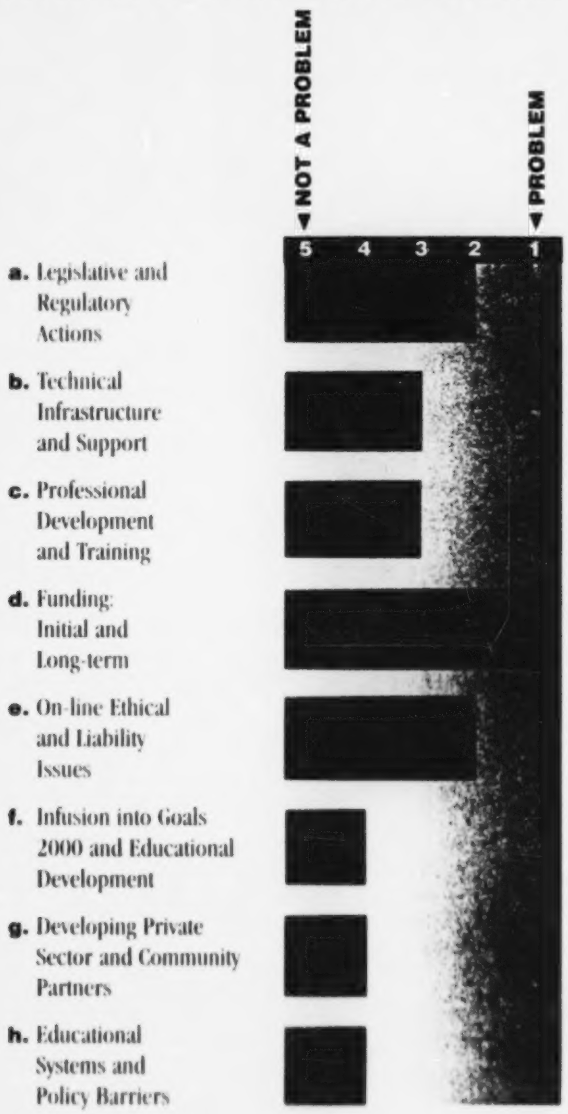
State

Other
Local District funding depends on the school district; about 20 percent have funding available. State: $350,000.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

Equity and long distance charges.

Networking issues or obstacles related to population distribution

Quality of rural phone lines; 93 phone companies in Minnesota; cost.

Other concerns about telecommunications

How to cooperate with higher education; funding sources; K-12 has private, local, long-term leases.

For further information, contact

Mark Manning
Minnesota Department of Education
550 Cedar St.
St. Paul, MN 55101
MANNIN@TIES.K12.MN.USA
(612) 297-3151
Fax (612) 297-1795

ADDITIONAL INFORMATION

Beginning to implement some Department of Education curricular material and legislative information services.

142

Mississippi

STATE FACTS

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Number of school districts
149

Number of school buildings
3,507

Number of K-12 teachers
28,557

Number of K-12 students
503,374

Number of students in largest district
33,444

Number of students in smallest district
278

Number of districts that have fewer than 1,000 students
14

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Long-range planning for telecommunications incorporated into state K-12 plans
It is being planned.

Goals 2000 planning committee established **No**

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

State

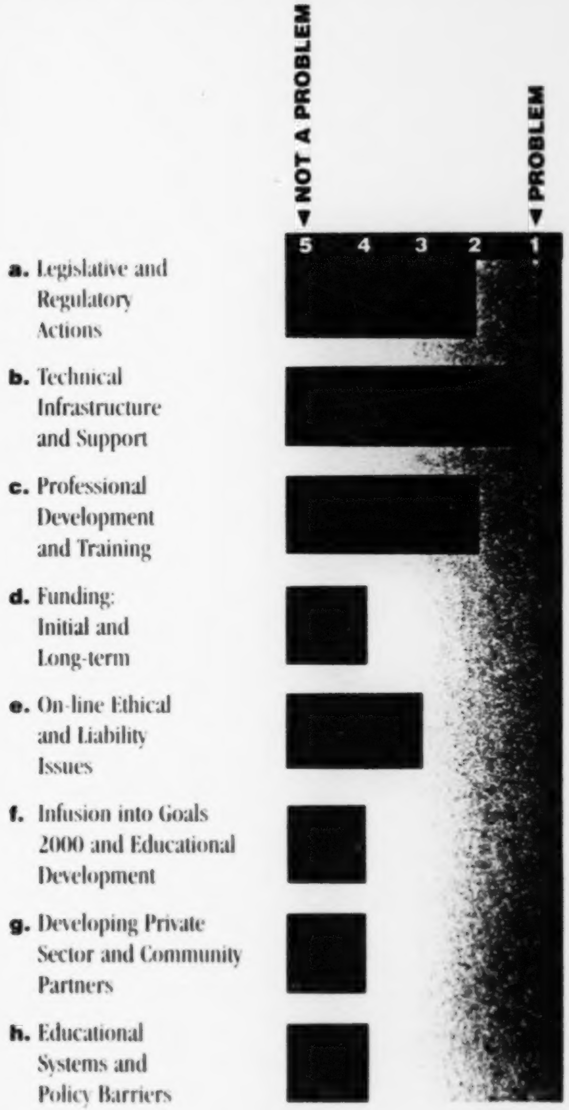
Other
Goals 2000.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**

Tariff information is available on-line **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
No response was provided.

Networking issues or obstacles related to population distribution
Cost of telecommunications lines.

Other concerns about telecommunications
Equity among schools.

For further information, contact
Nathan Slater
Mississippi Department of Education
P. O. Box 771
Jackson, MS 39205
ns1@ca.msstate.edu
(601) 359-3487
Fax (601) 359-2027

Missouri

STATE FACTS

Status of State Networks Operational | Partially Operational | Planned | Proposed | No Current Plans

Number of school districts
538

Number of school buildings
3,000

Number of K-12 teachers
53,000

Number of K-12 students
840,409

Number of students in largest district
38,519

Number of students in smallest district
21

Number of districts that have fewer than 1,000 students
365

MO

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **Yes**
In Lee's Summit, MO. Address not available.

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
In process.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**
In process.

Goals 2000 planning committee established **No**

Telecommunications contact
Susan Cole

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

State

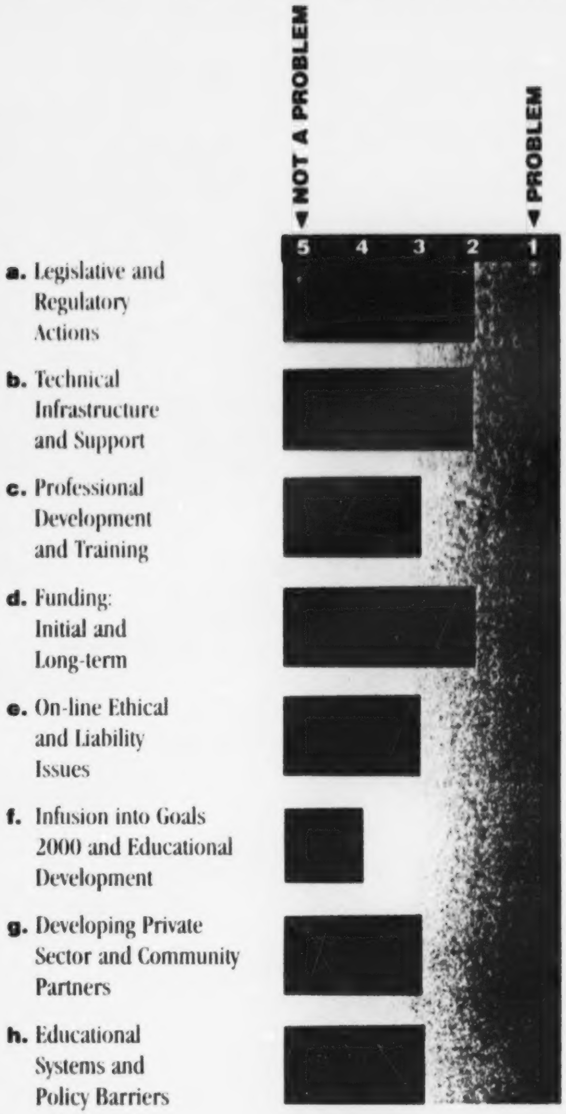
Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
There are over 40 phone companies in Missouri.

Networking issues or obstacles related to population distribution
Access and equity because of diversity.

Other concerns about telecommunications
No response was provided.

For further information, contact
Susan Cole
Missouri Department of Elementary and
Secondary Education
P.O. Box 480
Jefferson City, MO 65101
scole1@services.dese.state.mo.us
(314) 751-3175
Fax (314) 751-9434

Montana

STATE FACTS **Status of State Networks** **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

,Number of school districts
495

Number of school buildings
700

Number of K-12 teachers
9,950

Number of K-12 students
163,020

Number of students in largest district
16,281

Number of students in smallest district
2

Number of districts that have fewer than 1,000 students
451

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
METNET, a bulletin board system for teachers and students.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**
Several share with METNET, the bulletin board system.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **Yes**

Telecommunications contact
Diane Oldman

Intermediate educational units are available to assist schools with training for telecommunications implementation
Potentially.

Funding for Educational Networks

Funding sources available

Local District

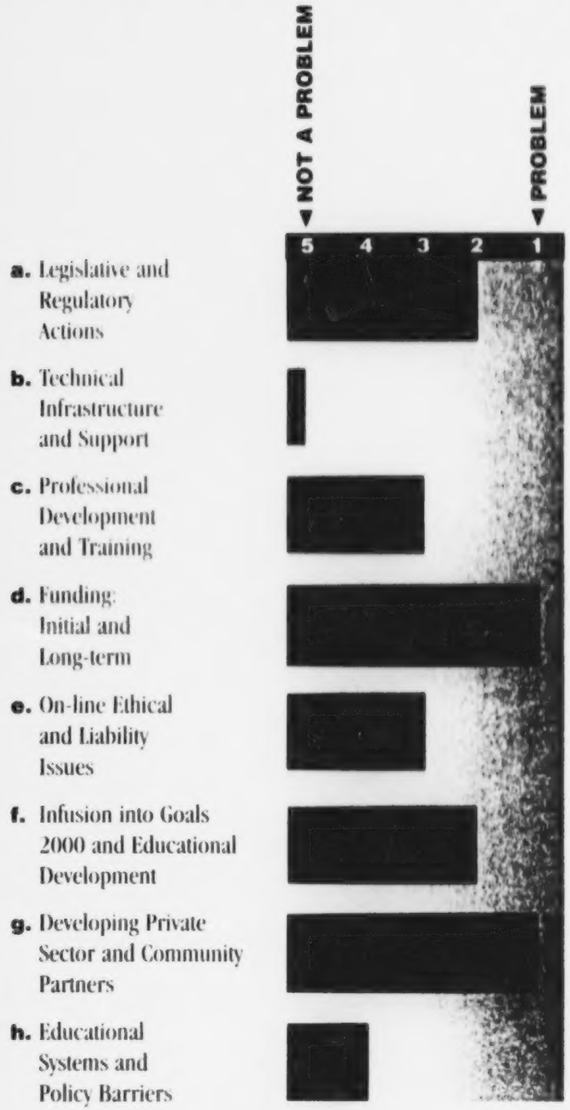
State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Split state providers.

Networking issues or obstacles related to population distribution
Distance between cities.

Other concerns about telecommunications
No response was provided.

For further information, contact
Johnny W. Lott
SIMMS Project
Department of Mathematical Sciences
University of Montana
Missoula, MT 59812
ma_jwl@selway.umt.edu
(406) 243-2696
Fax (406) 243-2674

Identified and rated another Potential Barrier to State Networks

Financial	1

Nebraska

STATE FACTS*

Number of school districts	**958**
Number of school buildings	**1,695**
Number of K-12 teachers	**21,160**
Number of K-12 students	**315,781**
Number of students in largest district	**43,158**
Number of students in smallest district	**20**
Number of districts that have fewer than 1,000 students	**913**

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Nebraska's electronic information services include state university and college library services, network news, and listing services.

State Gopher server or Mosaic home page address *See Additional Information.* **Yes**

K-12 Gopher server or Mosaic home page address For the Internet addresses for the 19 Educational Service Units scattered throughout the state. **Yes**

See Additional Information.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**
Not by the state.

Long-range planning for telecommunications incorporated into state K-12 plans **No**

Goals 2000 planning committee established **Yes**

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
The 19 Educational Services Units are required by statute to provide access and training related to the Internet.

Funding for Educational Networks

Funding sources available

Local District

State

Other
Educational Service Unit.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
The PUC has deregulated rates, which allows for negotiation to occur.

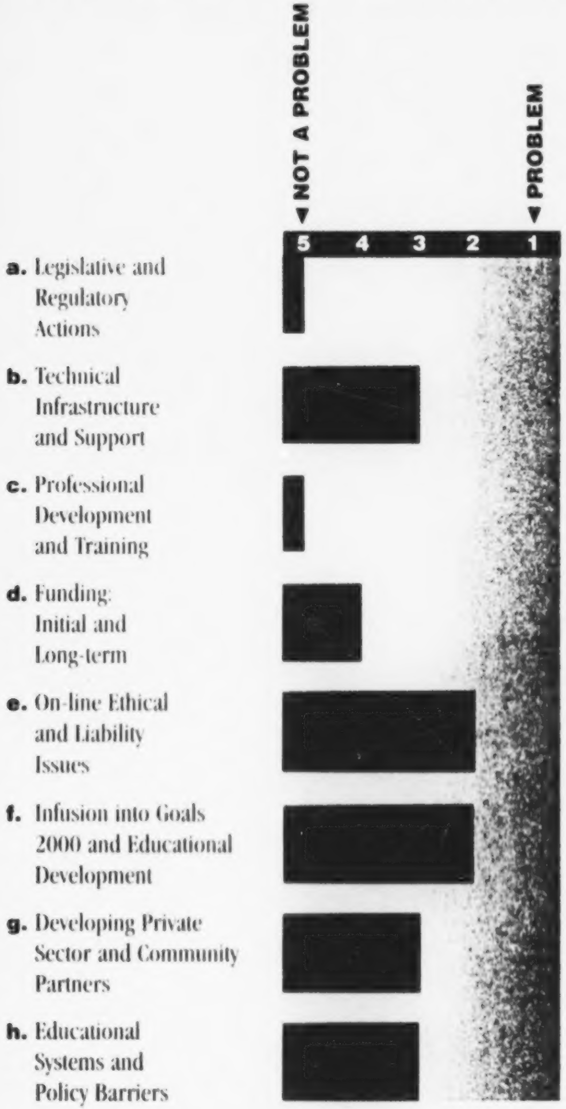
A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
There are ongoing cooperative efforts by the 42 phone companies that service the state and the Nebraska Division of Communications.

---

* Counts appearing in State Facts include public and nonpublic schools.

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
None.

Networking issues or obstacles related to population distribution
Urban settings have greater tax base with which to pay for network services.

Other concerns about telecommunications
No response was provided.

For further information, contact
David Ankenman
Nebraska Mathematics and Science Coalition
Box 880231
Lincoln, NE
ankenman@nde4.nde.state.ne.us
(402) 471-4820
Fax (402) 471-0117

Wayne Fisher
Nebraska Department of Education
Box 94987
Lincoln, NE 68509-4987
fisher@nde4.nde.state.ne.us
(402) 471-2085
Fax (402) 471-0117

ADDITIONAL INFORMATION

Community networks or freenets established in state **Yes**
There are currently two freenet efforts in the state. One is in Omaha, the other in Lincoln. Both were supported by the Department of Education.

They collaborate with the State Department of Education **Yes**

Identified and rated additional Potential Barriers to State Networks
Technical complexity of the task. Political structure (climate) to allow for cooperation. **2**

Schools access the Internet at nodes located in the 19 Educational Service Units. Six nodes have Gopher servers and two have Mosaic home pages. The node at the Department of Education will have Mosaic soon. Internet address of those having Mosaic pages:
nde4.nde.state.ne.us
ips.esu18.k12.ne.us
esu3.esu3.k12.ne.us
Nodes having Gopher servers are:
nde4.nde.state.ne.us.
esu6.esu6.k12.ne.us
genie.esu10.k12.ne.us
panesu.esu14.k12.ne.us
esu16.esu16.k12.ne.us

These last five and the esu3.esu.k12.ne.us server are located at Nebraska's 19 Educational Service Units. Internet addresses for other ESUs are:
mother.esu1.k12.ne.us
esu2.esu2.k12.ne.us
gilligan.esu7.k12.ne.us
pluggers.esu8.k12.ne.us
esu9.esu9.k12.ne.us
courier.esu11.k12.ne.us
esu15.esu15.k12.ne.us
esu17.esu17.k12.ne.us
lps.esu18.k12.ne.us
ops.esu19.k12.ne.us

Nevada

STATE FACTS

Number of school districts	**17**
Number of school buildings	**395**
Number of K-12 teachers	**12,509**
Number of K-12 students	**235,800**
Number of students in largest district	**145,327**
Number of students in smallest district	**130**
Number of districts that have fewer than 1,000 students	**4**

Status of State Networks	**Operational**	**Partially Operational**	**Planned**	**Proposed**	**No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/
Public Service Commission

State Department of Education

Other
University of Nevada System.

State Gopher server or Mosaic home page address **Yes**
gopher:gopher.unr.edu. (Gopher)
http://trapeze.scs.unr.edu:1055 (Mosaic)

K-12 Gopher server or Mosaic home page address **No**
Not to my knowledge.

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Long-range planning for telecommunications incorporated into state K-12 plans
In process.

Goals 2000 planning committee established **No**

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

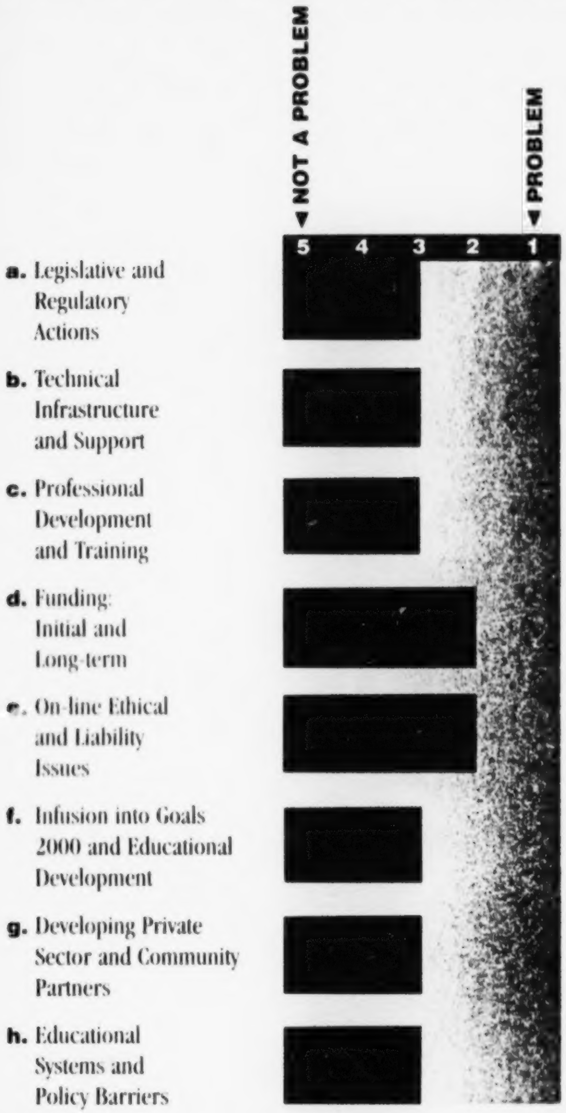
State

Other
Federal.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
No response was provided.

Networking issues or obstacles related to population distribution
We have several rural districts that would pay toll charges to access the Nevada School Network.

Other concerns about telecommunications
None.

For further information, contact

Cindy Lou Little
Lin Forrest
Nevada Department of Education
400 W. King St., Capitol Complex
Carson City, NV 89710
cindyl@nsn.scs.unr.edu
lforrest@nsn.scs.unr.edu
(702) 687-3136
Fax (702) 687-5660

New Hampshire

Status of State Networks*	Operational	Partially Operational	Planned	Proposed	No Current Plans

STATE FACTS

Number of school districts
176

Number of school buildings
450

Number of K-12 teachers
11,200

Number of K-12 students
185,360

Number of students in largest district
15,336

Number of students in smallest district
20

Number of districts that have fewer than 1,000 students
100

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **Yes**

One school has a home page.

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Not that I am aware of. The PUC may have some sort of plan.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Our K-12 plan is under development.

Goals 2000 planning committee established

New Hampshire has not yet submitted a Goals 2000 application. We are in the planning stage.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**

An intermediate structure consists of 67 School Administrative Units that are funded by the districts.

Funding for Educational Networks

Funding sources available

Local District

State

Other

Local districts: nearly 100 percent. State: $80,000 grant.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

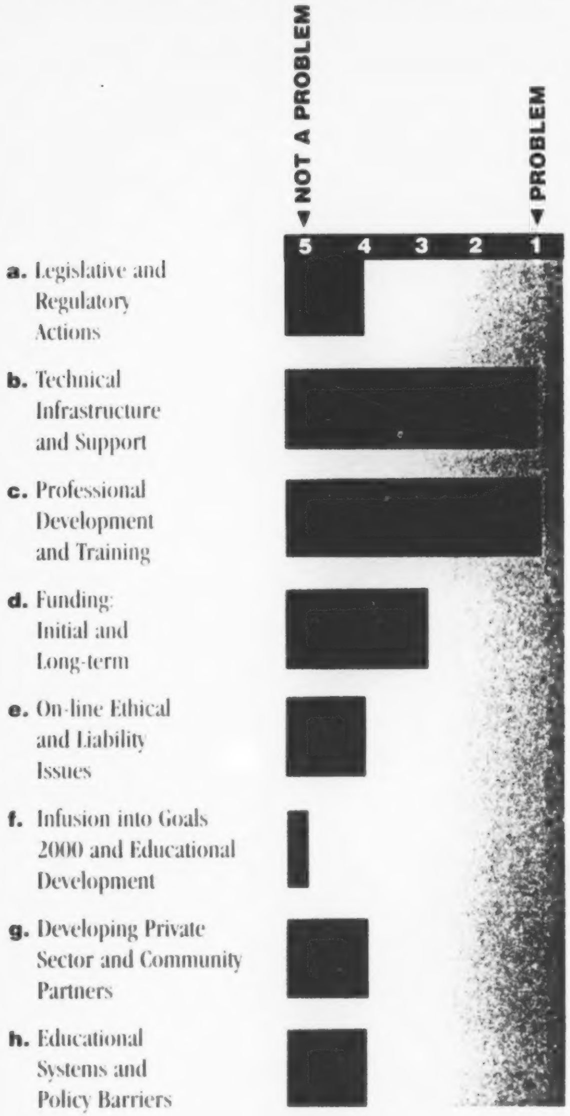
---

* The New Hampshire respondents did not provide a status classification.

163

164

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

No response was provided.

Networking issues or obstacles related to population distribution

No response was provided.

Other concerns about telecommunications

No response was provided.

For further information, contact

Sallie Fellows
New Hampshire State Department of Education
101 Pleasant St.
Concord, NH 03301
sallie@ed.state.nh.us
(603) 271-2778
Fax (603) 271-1953

NH

New Jersey

STATE FACTS

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Number of school districts
595

Number of school buildings
2,292

Number of K-12 teachers
81,593

Number of K-12 students
1,130,560

Number of students in largest district
45,356

Number of students in smallest district
103

NJ

Number of districts that have fewer than 1,000 students
298

167

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
School-based information, Department of Health, Department of Environmental Protection, libraries.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**
Not yet.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **Yes**
In process of formation.

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

BEST COPY AVAILABLE

Funding for Educational Networks

Funding sources available

Local District

State

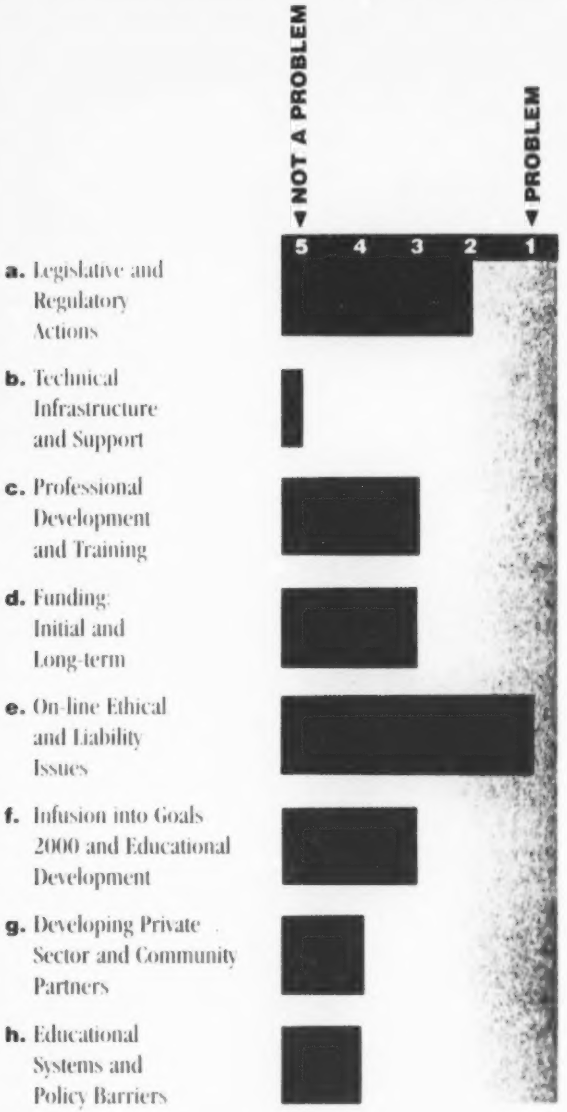
Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**

163

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
No response was provided.

Networking issues or obstacles related to population distribution
The usual problem of lack of services in rural/small districts.

Other concerns about telecommunications
Attempts to address tariff imposed by providers through the New Jersey Board of Regulatory Commissioners.

For further information, contact

Julia Stapleton
Ted Smorodin
New Jersey Department of Education
CN 500 - 240 West State St.
Trenton, NJ 08625-0500
jstaple@llnj.ll.pbs.org
ettn@llnj.ll.pbs.org
(609) 984-1644
(609) 984-1805
Fax (609) 292-7276

170

169

New Mexico*

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
89

Number of school buildings
704

Number of K-12 teachers
19,346

Number of K-12 students
321,164

Number of students in largest district
92,697

Number of students in smallest district
51

NM

Number of districts that have fewer than 1,000 students
48

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
New Mexico Technet. Tel/FTP.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **Yes**
APSICC/APS.Edu: (Los Alamos High School.)
See Additional Information

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**
Some communication.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established
Being appointed.

Telecommunications contact
Carlos Atencio

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
APS district.

Funding for Educational Networks

Funding sources available

Local District

State

Other
Federal grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**
We pay commercial rates.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Both New Mexico Technet and the University of New Mexico are moving to connect the state.

---

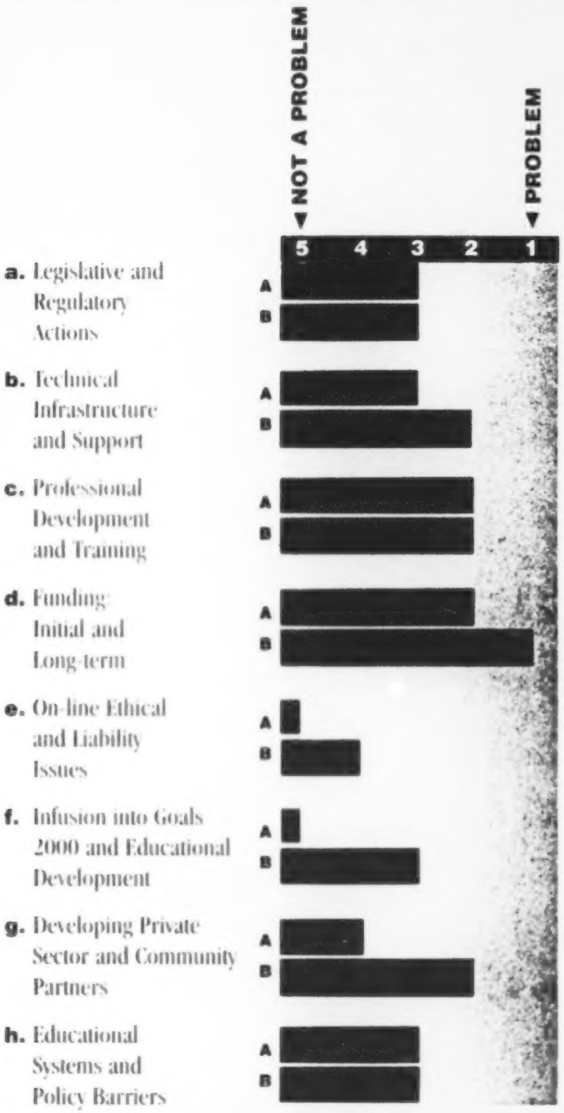
* Two respondents from New Mexico completed surveys. Their responses to some questions and barrier ratings are marked A and B.

171

BEST COPY AVAILABLE

172

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

A) Many poor rural districts.

B) Twenty-seven phone companies serve rural areas with a lack of facilities, vast distances, sparse population, and high unemployment and high poverty levels (25-30 percent). US WEST has the major population centers. Others are mom 'n pop operations or rural co-ops with little engineering expertise or plans. There's a lack of ISDN, frame relay in most rural areas.

Networking issues or obstacles related to population distribution

B) New Mexico is the fifth largest state in geography, the second smallest in population.

Other concerns about telecommunications

A) Awareness on the part of those who could benefit.

B) Cost, lack of facility, autonomous school districts, lack of telephone service in some areas, lack of funding.

For further information, contact

Kurt Steinhaus
Technology Unit, Department of Education,
New Mexico
300 Don Gaspar
Santa Fe, NM 87501-2786
SCHLSTEIN@TECHNET.NM.ORG
(505) 827-6648
Fax (505) 827-6696

Marianne Granoff
New Mexico Technet, Inc.
4100 Osuna NE, Suite 103
Albuquerque, NM 87109
granoff@technet.nm.org
(505) 345-6555
Fax (505) 345-6559

ADDITIONAL INFORMATION

Respondent B identified and rated another Potential Barrier to State Networks

Local autonomy of districts	1

New Mexico Technet, Inc. is a self-supporting, private, nonprofit corporation operating throughout New Mexico and on the Navajo Reservation in Utah, Arizona, and Colorado. It provides the management of a statewide fiber optic computer network serving the State of New Mexico, the state universities, and statewide research, educational, and economic-development interests.

Technet provides free Internet access to all public and private K-12 schools in New Mexico via free dial-in accounts (including 800 number access) on our VAX computers. Technet has established nodes throughout the state, including those at 27 high schools. Many smaller, two-year, and vocational post-secondary institutions also use Technet dial-in accounts for their Internet access.

Among the activities supported by Technet are:
The New Mexico Super-Computer Challenge Over 160 teams of New Mexico high school students (over 700 students and teachers) compete for scholarships and computer equipment for their schools by designing and completing projects using supercomputers at the various national laboratories located in New Mexico.
NEDCOMM, the New Mexico Educators Communication Network New Mexico primary and secondary schools are provided with modem access to guidance and consulting databases, college course directories at the state universities, school administration information, teacher availability databases, bulletin board systems, USENET News, etc.

Technet was originally created by the State of New Mexico, the three state research universities, and the national laboratories and research organizations.

New York

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
716

Number of school buildings
4,016

Number of K-12 teachers
188,846

Number of K-12 students
2,698,954

Number of students in largest district
990,000

Number of students in smallest district
14

Number of districts that have fewer than 1,000 students
216

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Many others; other state agencies, universities.

State Gopher server or Mosaic home page address **Yes**
NYSERNet.org
VM1.NYSED.GOV
UNIX5.NYSED.GOV

K-12 Gopher server or Mosaic home page address **Yes**
Onondaga BOCES is working with a number of BOCES on World Wide Web servers. Addresses are unavailable now.

Community networks or freenets established in state **Yes**
Several community net groups statewide. Buffalo FreeNet. Capital Region Freenet.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
Report on telecommunications exchange. Formed by the Governor in 1993.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**
1990. Incorporated as part of Goals 2000. We have received approval of our Goals 2000 Plan.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Dr. Michael Radlick

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
BOCES/NYSERNet partnership. They provide network access, training, and support.

Funding for Educational Networks

Funding sources available

Local District

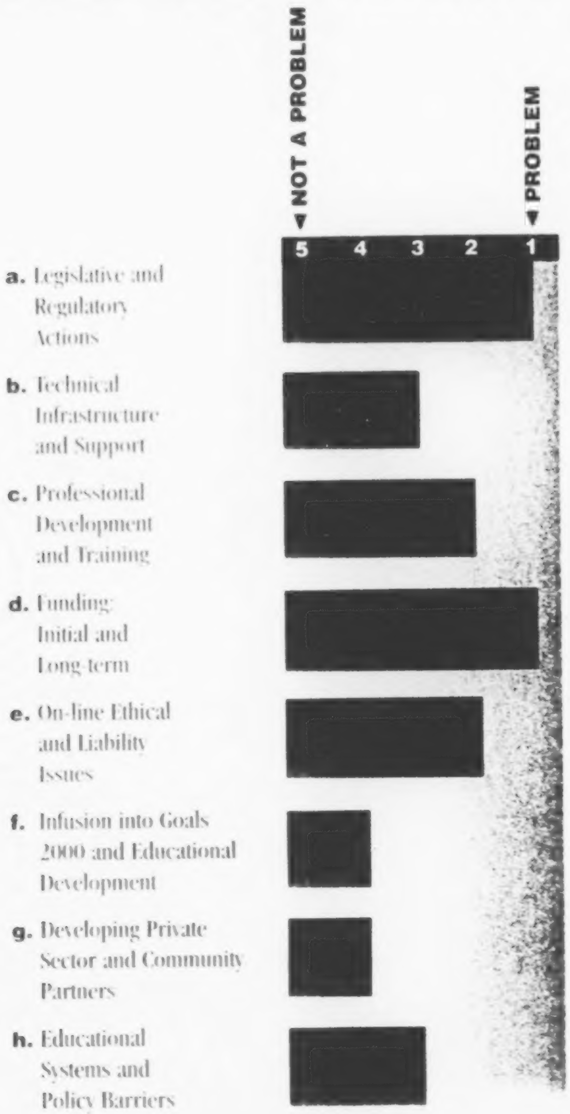
State

Other
Federal, partnerships with private vendors, universities.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
NYNEX—Recent PSC settlement. Also capital bonding.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

Forty telcos in state with varying capabilities. Rural geographical obstacles.

Networking issues or obstacles related to population distribution

Rural urban infrastructure.

Other concerns about telecommunications

Planning. Standards. Cable/telco integration. Homes. Community nets.

For further information, contact

Denis Martin
NYSERNet
Suite 103, 200 Elwood Davis Rd
Liverpool, NY 13088-6147
dmartin@NYSERNet.org
(518) 479-5156
Fax (315) 453-3052

Dr. Michael Radlick
New York State Education Department
Office of Instruction and Program Development
Room 967 EBA
Albany, NY 12234
MRADLICK@VM1.NYSED.GOV
(518) 473-9606
Fax (518) 486-5295

Identified and rated another Potential Barrier to State Networks

Equity	1

BEST COPY AVAILABLE

North Carolina

STATE FACTS

Number of school districts	119
Number of school buildings	1,948
Number of K-12 teachers	68,566
Number of K-12 students	1,387,763
Number of students in largest district	82,228
Number of students in smallest district	745
Number of districts that have fewer than 1,000 students	2

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
State Personnel and State Library.

State Gopher server or Mosaic home page address **Yes**
Gopher.Sips.State.NC.US
www.sips.state.nc.us (Mosaic)

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
North Carolina Information Highway (NCIH).

Long-range planning for telecommunications incorporated into state K-12 plans
In progress.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Elsie Brumback

Intermediate educational units are available to assist schools with training for telecommunications implementation
Partially. The 1994 session of general assembly appropriated nine positions to work with schools out of our Regional Service Centers.

Funding for Educational Networks

Funding sources available

Local District

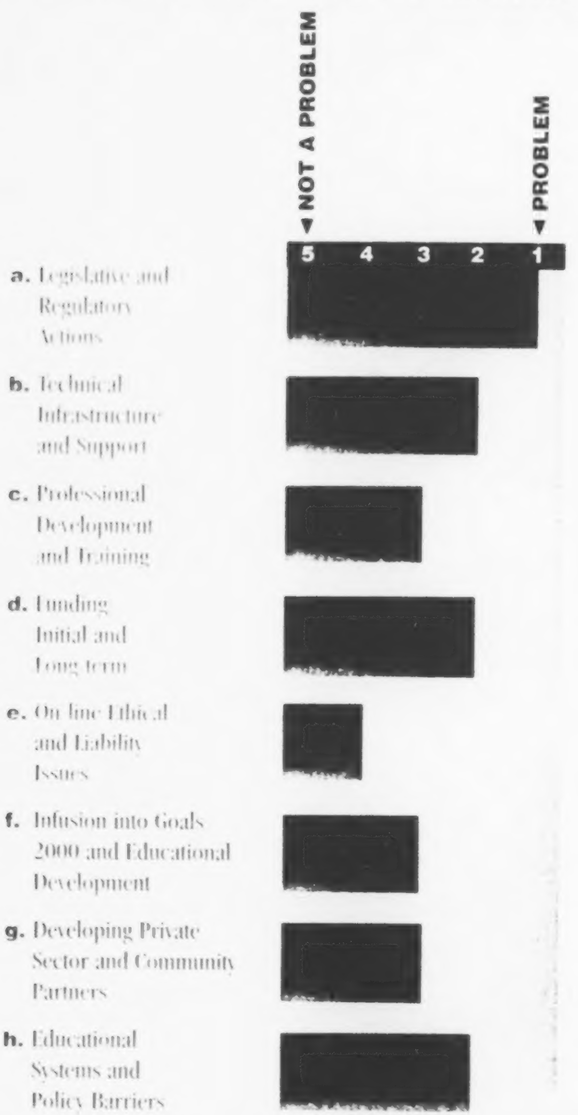
State

Other
$42 million for school technology, $7 million for the North Carolina Information Highway.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Southern Bell, GTE, and Carolina Telephone providing fiber backbone for NCIH.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Reasonable cost/service to remote areas

Networking issues or obstacles related to population distribution
Service providers tend to focus on population-dense and business-rich locations.

Other concerns about telecommunications
A second problem is older infrastructures both within and between buildings.

For further information, contact
Elsie L. Brumback
North Carolina Department of Public Education
301 N. Wilmington St.
Raleigh, NC 27601-2825
ebrumbac@dpi.state.nc.us
(919) 715-1530
Fax (919) 733-4762

BEST COPY AVAILABLE

North Dakota

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
260

Number of school buildings
480+

Number of K-12 teachers
7,000+

Number of K-12 students
127,000+

Number of students in largest district
11,000+

Number of students in smallest district
3

Number of districts that have fewer than 1,000 students
246

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address
Under development.

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Long-range planning for telecommunications incorporated into state K-12 plans **No**

Goals 2000 planning committee established **No**

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

State

Other
School memberships.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS

NOT A PROBLEM
PROBLEM
5
4
3
2
1
a. Legislative and Regulatory Actions
b. Technical Infrastructure and Support
c. Professional Development and Training
d. Funding Initial and Long term
e. On-line Ethical and Liability Issues
f. Infusion into Goals 2000 and Educational Development
g. Developing Private Sector and Community Partners
h. Educational Systems and Policy Barriers

Networking issues or obstacles related to regional location
No response was provided.

Networking issues or obstacles related to population distribution
No response was provided.

Other concerns about telecommunications
No response was provided.

For further information, contact
Gleason Sackman
SENDIT Project
P.O. Box 5164, NDSU Computation Center
Bismarck, ND
sackman@sendit.nodak.edu

Ohio

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
611

Number of school buildings
3,900

Number of K-12 teachers
90,000

Number of K-12 students
1,800,000

Number of students in largest district
73,900

Number of students in smallest district
6

Number of districts that have fewer than 1,000 students
122

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **ODEVS1.ODE.OHIO.GOV**	Yes
K-12 Gopher server or Mosaic home page address	No
Community networks or freenets established in state	Yes
They collaborate with the State Department of Education	No

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans	Yes
Long-range planning for telecommunications incorporated into state K-12 plans	No
Goals 2000 planning committee established	Yes
Intermediate educational units are available to assist schools with training for telecommunications implementation	No

Funding for Educational Networks

Funding sources available

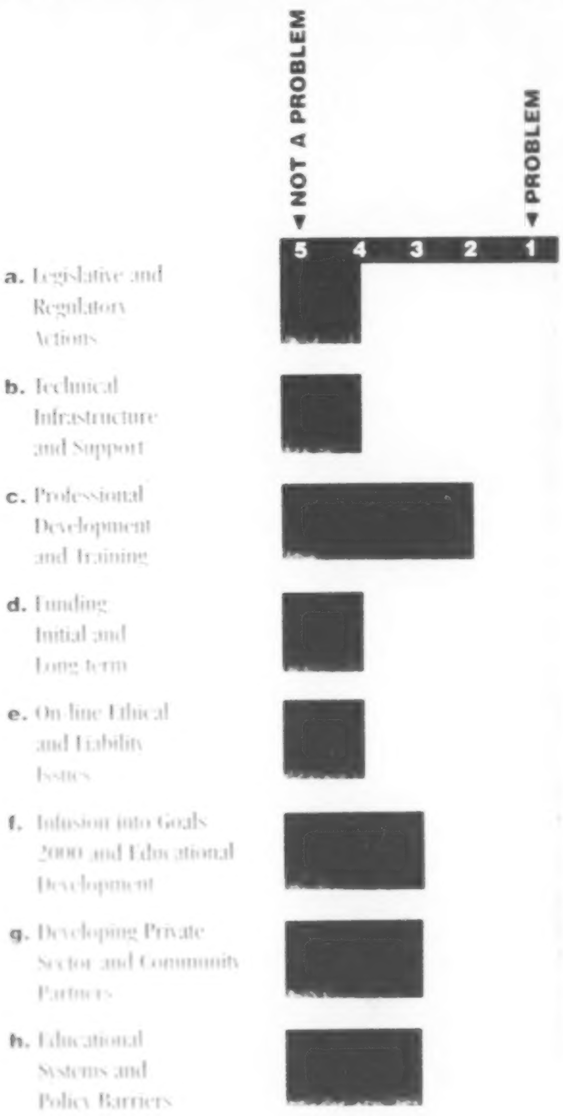
Local District

State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission	No
A major telecommunications provider has a program encouraging infrastructure development in the state **Ameritech supports distance learning projects.**	Yes

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

None

Networking issues or obstacles related to population distribution

None

Other concerns about telecommunications

There is concern that the National Science Foundation will drop its funding of Internet by privatizing access. If private firms charge for Internet access, it may be detrimental to K-12 users who can't afford the cost. Maybe the NSF funding should be targeted toward insuring K-12 will get free access.

For further information, contact

Steve Graves
Ohio Department of Education
2151 Carmack Rd
Columbus, OH 43221
ADMIN_GRAVES@ODE.OHIO.GOV
(614) 466-7003
Fax (614) 466-0022

Andrew Qualtire
Management Council
Ohio Educational Computer Network
110 Brian St
Mingo Junction, OH 43938
SDEA_QUALTIR@ODE.OHIO.GOV
(614) 535-1651
Fax (614) 283-2709

Oklahoma

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
554

Number of school buildings
1,821

Number of K-12 teachers
40,000

Number of K-12 students
605,000

Number of students in largest district
41,341

Number of students in smallest district
23

Number of districts that have fewer than 1,000 students
434

OK

191

BEST COPY AVAILABLE

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Government, educational, legislative, educational television.

State Gopher server or Mosaic home page address **Yes**
gopher osrhe.edu (ONENET)
www.osrhe.edu (Mosaic)

K-12 Gopher server or Mosaic home page address **Yes**
gopher osrhe.edu (ONENET)
www.osrhe.edu (Mosaic)

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
Oklahoma State Telecommunications and Data Processing Committee State Plan; Tele-medicine State Plan; National Information Infrastructure and State Chamber of Commerce State Plan.

Long-range planning for telecommunications incorporated into state K-12 plans
Currently developing state technology and telecommunications plan.

Goals 2000 planning committee established **No**
Not yet determined; half to be chosen by new Governor, half by Acting State Superintendent of Public Schools.

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**
Not at the present time.

192

Funding for Educational Networks

Funding sources available

Local District

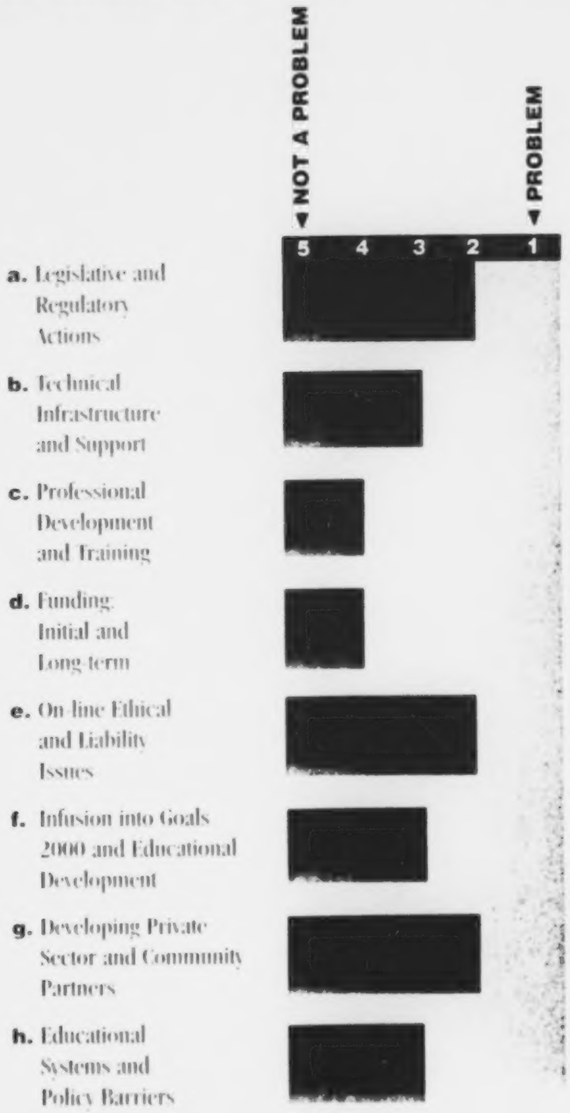
State

Other
Federal grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission
Currently under review.

A major telecommunications provider has a program encouraging infrastructure development in the state **No**
None.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Twenty-nine telcos in state; rural geographical location.

Networking issues or obstacles related to population distribution
Rural-urban infrastructure.

Other concerns about telecommunications
Planning, standards, school and community access, equity.

For further information, contact
John Curran
Oklahoma State Department of Education
2500 N. Lincoln Blvd.
Oklahoma City, OK 73105
jcurran@phoenix.osrhe.edu
(405) 521-3994
Fax (405) 521-6205

Mike Erhart
ONENET
2500 N. Lincoln Blvd.
Oklahoma City, OK 73105
mike@phoenix.osrhe.edu
(405) 524-9210

ADDITIONAL INFORMATION

ONENET is operational since July 1, 1993. It provides the wide area network for the state.

193

Oregon*

STATE FACTS

Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Number of school districts
277

Number of school buildings
1,215

Number of K-12 teachers
31,595

Number of K-12 students
516,611

Number of students in largest district
54,975

Number of students in smallest district
7

Number of districts that have fewer than 1,000 students
141

OR

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **Yes**
Oregon state Gopher.

K-12 Gopher server or Mosaic home page address
They will have soon.

Community networks or freenets established in state **Yes**
Yes, but with little collaboration [with the State Department of Education].

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **Yes**

Telecommunications contact
Tom Cook

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
...we actually have about 40 now.

Funding for Educational Networks

Funding sources available

Local District

State

Other
Special grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**
None.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
US WEST is working with the Department of Education and school districts to develop infrastructure along with the Internet provider which is NorthWestNet. ED-NET is a state network with modem access as well as Internet access.

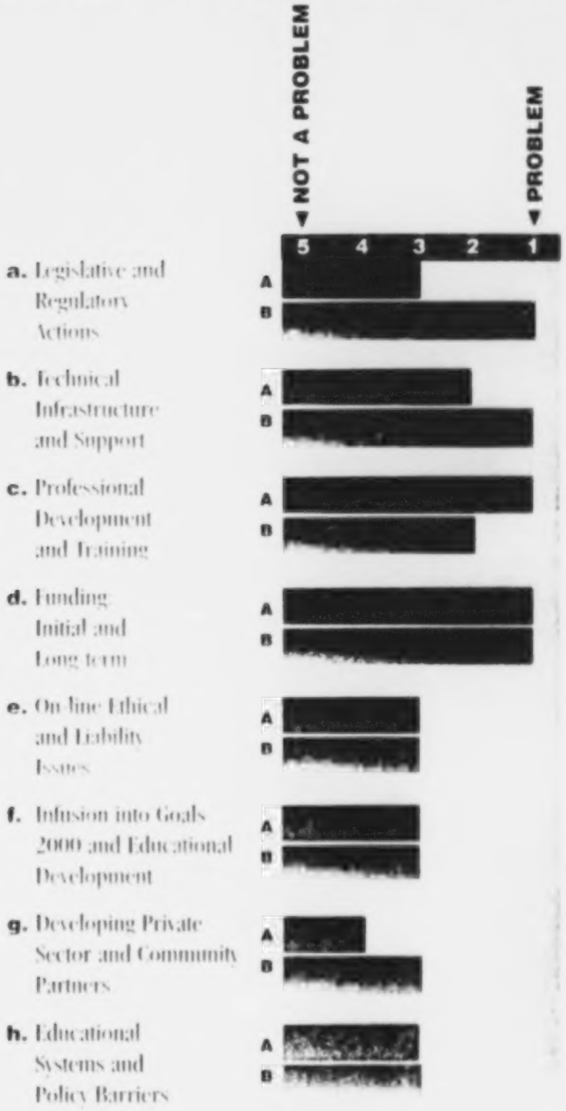
---

* Two respondents from Oregon completed surveys. Their responses to questions have been combined and their barrier ratings are marked A and B.

195

196

POTENTIAL BARRIERS TO STATE NETWORKS*



Networking issues or obstacles related to regional location

No response was provided.

Networking issues or obstacles related to population distribution

No response was provided.

Other concerns about telecommunications

No response was provided.

For further information, contact

Tom Cook
Jim Sanner
Oregon Department of Education
Public Service Building
255 Capitol St. NE
Salem, OR 97310-0203

tom.cook@state.or.us
(503) 378-3185 ext. 155
Fax (503) 378-5156
jim.sanner@state.or.us
(503) 378-8004
Fax (503) 373-7968

BEST COPY AVAILABLE

Pennsylvania

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
501

Number of school buildings
3,194

Number of K-12 teachers
99,720

Number of K-12 students
1,717,613

Number of students in largest district
190,900

Number of students in smallest district
228

Number of districts that have fewer than 1,000 students
47

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans
Presently being incorporated.

Long-range planning for telecommunications incorporated into state K-12 plans
Presently being incorporated.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Wally Leech
Pennsylvania Department of Education
LEECH@HSLC.ORG

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Pennsylvania has 29 intermediate units helping schools with network creation and with other telecommunications implementation.

Funding for Educational Networks

Funding sources available

Local District

State

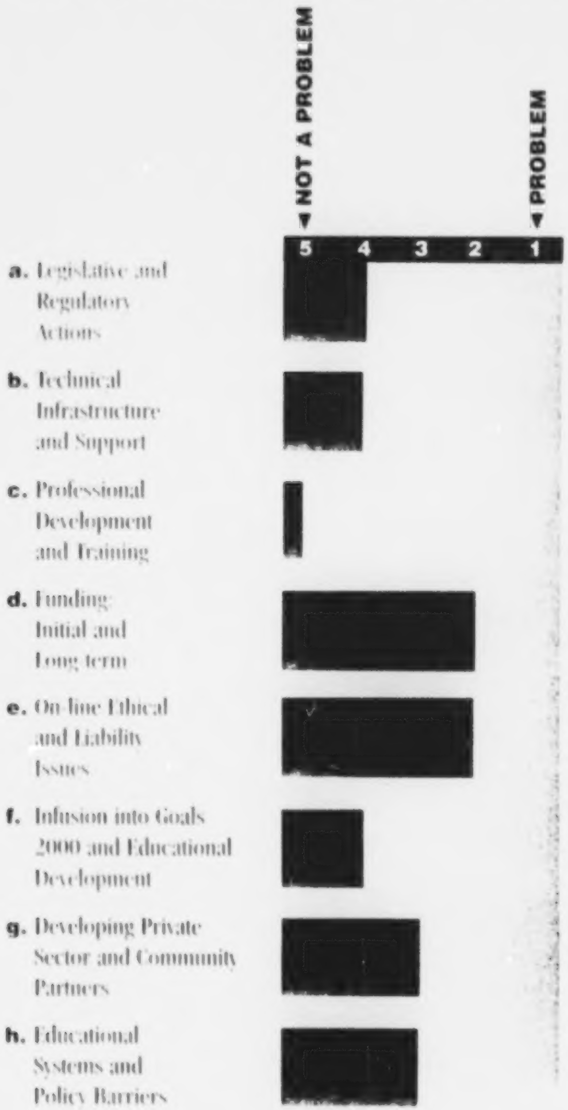
Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
PANET—state telecommunications phone line is available to K-12 education and provides lower cost phone calls.

PA

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

Pennsylvania is very rural. Very expensive to get lines to these distant, small, rural areas.

Networking issues or obstacles related to population distribution

Same as above.

Other concerns about telecommunications

Cost. Schools cannot afford monthly fees to cable companies, phone companies, etc.

For further information, contact

Pennsylvania Department of Education
333 Market St.
Harrisburg, PA 17126-0333

Rhode Island

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
36

Number of school buildings
310

Number of K-12 teachers
12,050

Number of K-12 students
145,000

Number of students in largest district
22,832

Number of students in smallest district
118

Number of districts that have fewer than 1,000 students
4

RI

203

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
Distributed services by cooperating providers: Brown University, Department of State Library Services, University of Rhode Island, Rhode Island Department of Education, WSBE Public TV.

State Gopher server or Mosaic home page address **No**
Under development.

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**
And the Department of State Library Services is also a provider.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**
Beginning development under the Office of Higher Education.

Long-range planning for telecommunications incorporated into state K-12 plans
Under development.

Goals 2000 planning committee established
To be determined.

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**
In Rhode Island we have the ability to coordinate the training efforts of higher education, local school efforts, and other training providers.

Funding for Educational Networks

Funding sources available

Local District

State

Other
Philanthropic.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
The telephone company has provided prepaid profit credit for services for schools.

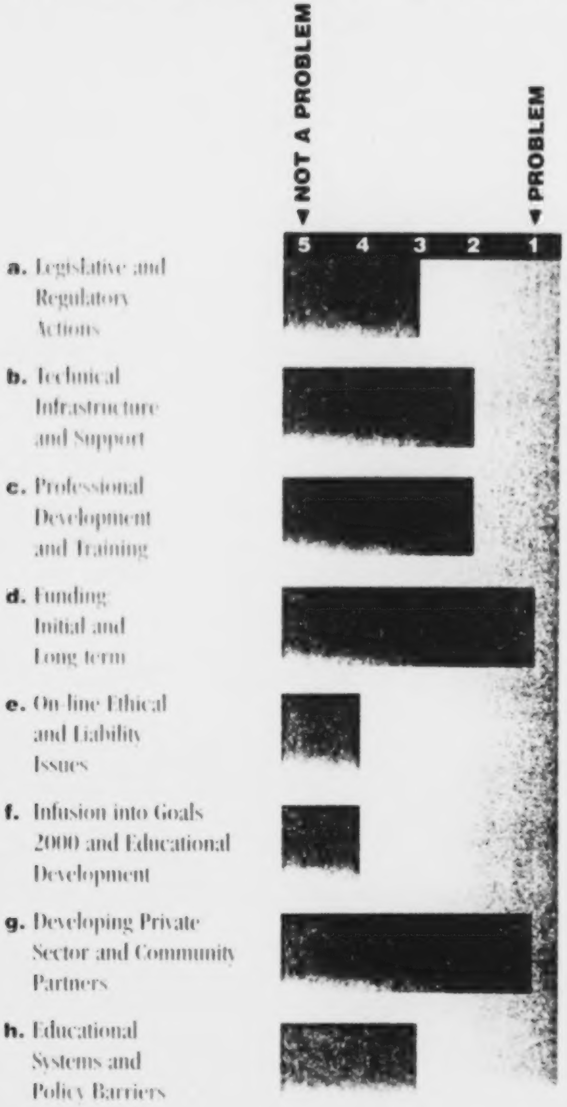
Tariff information is available on-line **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
NYNEX, free phone line.

BEST COPY AVAILABLE

204

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Funding to support impoverished areas

Networking issues or obstacles related to population distribution
Urban areas lack funds, human resources, and significant business partners

Other concerns about telecommunications
None

For further information, contact
William J. Fiske
Rhode Island Department of Education
22 Hayes St., Room B-4
Providence, RI 02908
Fiske@K12.Brown.edu
(401) 277-2821
Fax (401) 351-7874

South Carolina

STATE FACTS

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Number of school districts
91

Number of school buildings
1,098

Number of K-12 teachers
38,222

Number of K-12 students
632,258

Number of students in largest district
44,343

Number of students in smallest district
542

Number of districts that have fewer than 1,000 students
7

The South Carolina respondent did not rate barrier F.

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/
Public Service Commission

State Department of Education

Other
See Additional Information

State Gopher server or Mosaic home page address **Yes**

South Carolina State Gopher Server GOPHER.TC.UMN.EDU This is a list of all Gopher services. Select "Other Gopher and Information Services." From the next menu, select "States." From there, select "South Carolina." This will list the Gopher servers within our state.

SunBelt Gopher Server GOPHER.SUNBELT.NET From the main menu, select "Gopher Servers of the World" and follow the procedure indicated above.

K-12 Gopher server or Mosaic home page address **No**

See Additional Information.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans
No response was provided.

Long-range planning for telecommunications incorporated into state K-12 plans **No**

Goals 2000 planning committee established
N/A.

Intermediate educational units are available to assist schools with training for telecommunications implementation
None.

Funding for Educational Networks

Funding sources available

Local District

State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state
No response was provided.

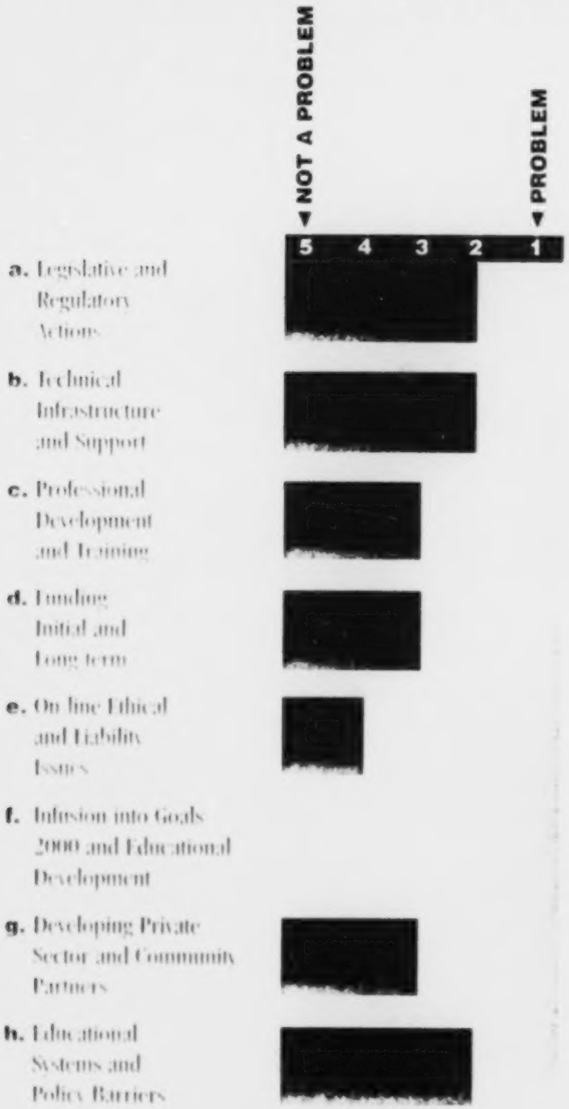
SC

BEST COPY AVAILABLE

2117

203

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Technical ability is readily available; the problem is reasonable cost for providing services and the related funding issues.

Networking issues or obstacles related to population distribution
The greatest obstacle with population distribution is the lack of affordable telecommunications facilities that can provide access to all citizens, educational institutions, etc., within the state. The state's goal is to provide affordable access to all citizens, not just those in urban areas.

Other concerns about telecommunications
Concerns not mentioned include the personnel resources to provide customer support and training for all the services that will be available via the various networks.

For further information, contact
Shirley McCandless
South Carolina Department of Education
300 Gervais St
Columbia, SC 29201
SMcCand@SDE.State.SC.US
(803) 737-1087
Fax (803) 734-0527

Community networks or freenets established in state Yes

They collaborate with the State Department of Education No
There is no formal collaboration.

South Carolina has a large, statewide, shared-backbone network consisting of multiple Tls and digital cross-connect devices. The network provides backbone facilities for the agencies having statewide needs and also provides facilities for the state's long distance voice system. The Office of Information Resources (OIR) has recently implemented a Columbia Metropolitan Area Network or MetroNet. The MetroNet will permit state government agencies in Columbia to connect their local area networks at various sites and will provide transport for intergovernmental electronic messaging, document transfer/sharing, and access to the Internet. A contract has been negotiated giving state government Tl access to the Internet with SunBelt.Net in Rock Hill. OIR is planning to expand the multiprotocol network throughout the state. Cisco routers in the Greenville, Charleston, and Florence will be connected by Tl data circuits to the MetroNet.

The state is designing a statewide dial-up network to meet a growing need for low-cost information transfer to locations not served by dedicated or direct-connect data services. One immediate need is dial-up Internet access for the state's K-12 community. The goal is to provide local access at a fixed rate.

The state also has a statewide multichannel Educational Television System using ITFS technology to serve K-12 and higher educational institutions. The system is served by state-owned microwave, but recently has begun to use satellite transmission. The use of compressed video is being explored for video conferencing and distance learning.

South Dakota

STATE FACTS

Status of State Networks Operational · Partially Operational · Planned · Proposed · No Current Plans

Number of school districts
178

Number of school buildings
713

Number of K-12 teachers
11,627

Number of K-12 students
151,073

Number of students in largest district
17,786

Number of students in smallest district
21

Number of districts that have fewer than 1,000 students
152

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
Selected K-12 Internet newsgroups; educational events; job openings; IBM/Macintosh shareware; Internet newsgroups/e-mail.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**
Resources are being shared between the state's Technology and Innovations in Education (TIE) [South Dakota's K-12 network provider] and INDIANnet.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Long-range planning for telecommunications incorporated into state K-12 plans **No**
A technology plan is under development.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Dr. James Parry
Director
Technology and Innovations in Education
jparry@sdtie.sdserv.org

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
See Additional Information

Funding for Educational Networks

Funding sources available

Local District

State

Other
Competitive federal grants have been applied for.

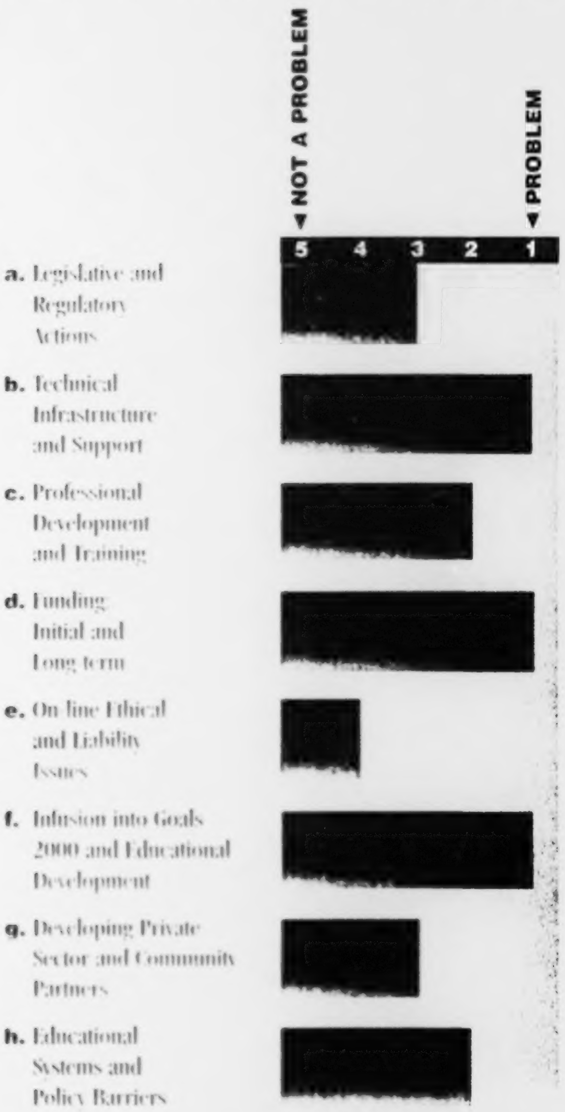
Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

SD

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

South Dakota's small population and the fact that a large number of schools are in extremely rural locations make access of any kind expensive. See *Additional Information.*

Networking issues or obstacles related to population distribution

The state's small population and large land areas means that commercial vendors probably will not find South Dakota profitable to serve at affordable rates.

Other concerns about telecommunications

- South Dakota has more than 32 independent telephone companies, thus complicating statewide networking.
- School budgets as well as state government are at risk of large budget cuts this year, which further lessens the likelihood of state funding for telecommunications.
- Historically, higher education and K-12 have not collaborated extensively. The collaborations are necessary to build a strong telecommunications infrastructure.
- The lack of a comprehensive state plan for telecommunications means that the systems are being developed in parallel, rather than collaboratively.

For further information, contact

Randy Foudray
Technology and Innovations in Education (TIE)
1925 Plaza Blvd.
Rapid City, SD 57702-9357
rfoudray@silver.sdsmt.edu
(605) 394-1876
Fax (605) 394-5315

Anne Fallis
Technology for the Rural Enhancement of
Communities (TREC) and TIE
22571 Smokey Ridge Rd.
Rapid City, SD 57702-6139
afallis@silver.sdsmt.edu
(605) 348-7293
Fax (605) 341-0940

ADDITIONAL INFORMATION

The responsibility for K-12 networking is not placed within the state Department of Education, but at Technology and Innovations in Education (TIE), a nonprofit that often functions as an extension of the South Dakota Department of Education and Cultural Affairs.

TIE provides leadership and assistance to schools regarding technology applications and school restructuring. TIE services are available to all interested schools and include RDE (the K-12 network), the TIE newsletter, TIE's annual conference featuring new technology, technology training and technical assistance to schools, and the TIE Preview Center, which offers software and videodisk products for review.

Commercial vendors offer [WAN network] points-of-presence in only three populations centers. The point-of-presence of the state's NSF vendor MIDNET is in the extreme southeast corner of the state. There is a state backbone running from east to west in the center of the state, but the majority of schools are some distance from this line. For example, TIE pays $300 per month for a 56KB line, plus the yearly membership fee to MIDNET of $1600. Hookup time has been extremely slow.

Six other Internet nodes exist in the state. Five are at higher educational institutions, but there is little access allowed yet for K-12 schools. A major NSF Connections grant was written in 1992, and it is planned to bring up 23 new nodes but to date those connections are not in place.

213

BEST COPY AVAILABLE

214

Tennessee

STATE FACTS

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Number of school districts
139

Number of school buildings
1,532

Number of K-12 teachers
35,000

Number of K-12 students
840,000

Number of students in largest district
100,000 (approx.)

Number of students in smallest district
200 (approx.)

Number of districts that have fewer than 1,000 students
40 (estimate)

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
See Additional Information.

State Gopher server or Mosaic home page address
Not explicitly set up by the Tennessee Education Network (TEN).

K-12 Gopher server or Mosaic home page address **Yes**
Reference previous answer.

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes**
To the extent that we all know about each other.

Technology Plans

Long range planning for telecommunications incorporated into state technology plans **Yes**
At the state telecom organization level to meet the needs for state government operations as a telecom user, yes; at the Governor's level to incorporate economic development strategies, in process.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**
Yes, although we're still working on it, realistically.

Goals 2000 planning committee established **No**

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**
Training centers run by the State Department of Education and higher ed.

Funding for Educational Networks

Funding sources available

Local District

State

Other
Private/philanthropic resources garnered by districts plus some broad-based creative partnership efforts, such as Vanderbilt University/Chamber of Commerce/State Purchasing collaborative to locate, refurbish, and deliver used PCs from the private sector to teachers.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
There is one for phone lines to schools for use in dialing into databases (Internet), one for phone lines in schools for voice processing/voicemail services, and one for T1 for video.

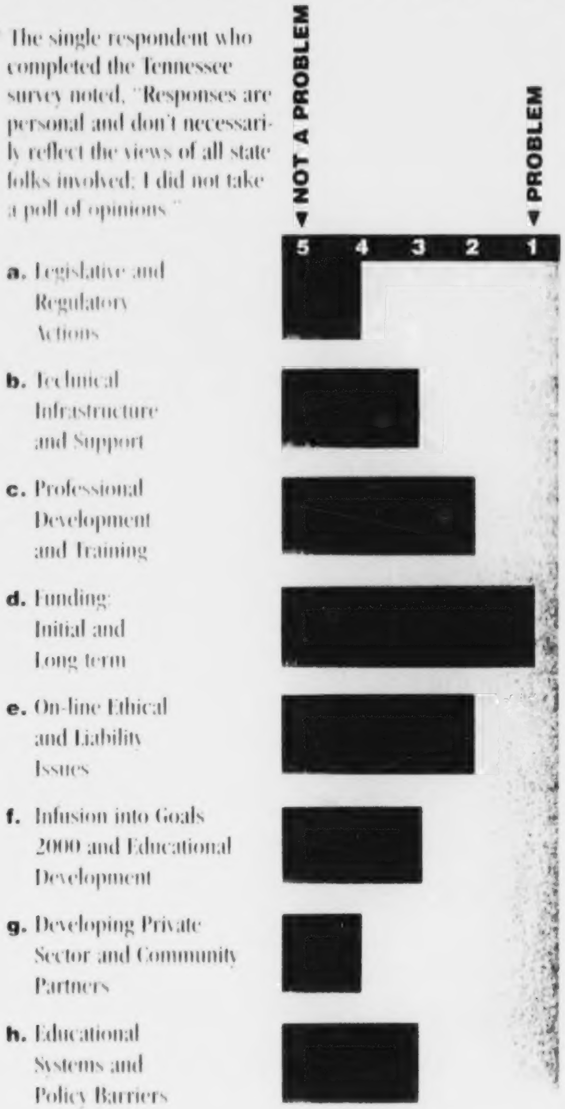
TN

215

216

POTENTIAL BARRIERS TO STATE NETWORKS*

* The single respondent who completed the Tennessee survey noted, "Responses are personal and don't necessarily reflect the views of all state folks involved; I did not take a poll of opinions."



Networking issues or obstacles related to regional location
N/A

Networking issues or obstacles related to population distribution
Equity ($ resources at local level) a major issue. Also that we want to move ahead into higher level networks (direct connect instead of dial-up; higher bandwidth, etc.) as soon as possible, but it tends to be the large, urban districts that are more ready and, therefore, are more likely to be able to provide "better" services to their teachers such as Mosaic, CU-SeeMe, etc.

Other concerns about telecommunications
N/A

For further information, contact
Jack R. McFadden
Director, Telecommunications Policy and Planning
State of Tennessee
Department of Finance and Administration
OIR/Telecommunications
598 James Robertson Pkwy
Nashville, TN 37243
JMCFADDEN@TEC.NET
Phone (615) 741-5080
Fax (615) 741-4996

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Reference the PSC's FYI Tennessee program begun in 1990: There's one for phone lines to schools for use in dialing into databases (Internet), one for phone lines in schools for voice processing/voicemail services, and one for T1 for video.

Identified another Potential Barrier to State Networks
Biggest problem, one I do not put under either Technical Infrastructure or Training, is lack of human infrastructure to support networking design, implementation, and operation—especially at the local level (LAN administrators, etc.)

TEN, Tennessee Education Network, is a state Department of Education/K-12 initiative. It is being conceived and implemented in the broader context of state government networking, working with those responsible for managing those networks in the Office for Information Resources. I find the use of the term "state network" unclear—whether it means the state K-12 network or *all* state government networking. We're trying to keep it all in sync in Tennessee.

The state's computer networking efforts are in first phase (dial-in) this summer, so considerable growth and change is in store for the network in this year.

BEST COPY AVAILABLE

Texas

STATE FACTS

Number of school districts
1,048

Number of school buildings
6,184

Number of K-12 teachers
261,427

Number of K-12 students
3,535,742

Number of students in largest district
198,013

Number of students in smallest district
7

Number of districts that have fewer than 1,000 students
581

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Department of Information Resources.

State Gopher server or Mosaic home page address **Yes**
See *Additional Information*

K-12 Gopher server or Mosaic home page address **Yes**
See *Additional Information*

Community networks or freenets established in state **Yes**
We have one in El Paso and in the Dallas-Fort Worth metroplex. There are several in the planning stages, including Victoria and Houston. Yes, we share information with our community partners.

They collaborate with the State Department of Education **Yes**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established **No**
The Goals 2000 planning committee has not yet been appointed.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
The 20 regional education service centers offer staff development and support services for the school districts. They play a major role in the support of the network initiatives.

Funding for Educational Networks

Funding sources available

Local District

State

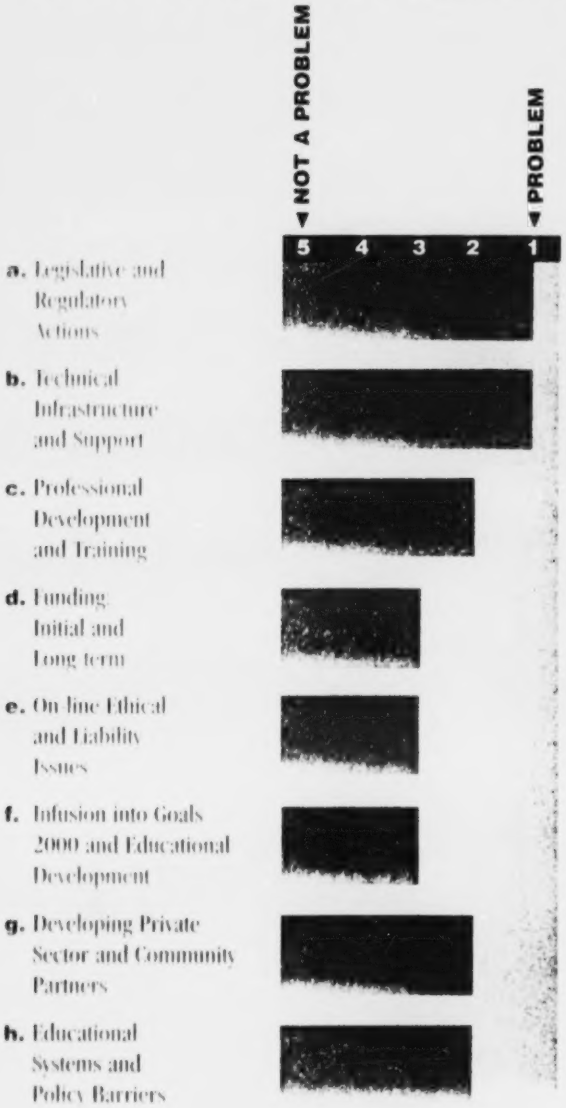
Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**
There is an education tariff of a 25 percent discount for any intrastate telephone service that is used 50 percent of the time or more for distance learning: the Texas Distance Learning Discount.

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

TX

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
The physical infrastructure required for such network technology is absent in many of the schools. There is a lack of sufficient electrical wiring as well as computers, local area networks, and, more importantly, the trained staff who will be needed to support the use of this technology. The appropriate use of the technology is just being developed.

Networking issues or obstacles related to population distribution
Texas covers a large geographic area with students in both densely populated areas as well as very sparsely populated areas. Attempting to offer an equitable network to support such diversity is a challenge.

Other concerns about telecommunications
No response was provided.

For further information, contact
Connie Stout
Texas Education Network (TENET)
Pickle Research Center, CMS1.154
The University of Texas at Austin
10100 Burnet Rd.
Austin, TX 78758-4497
cstout@tenet.edu
(512) 475-9419
Fax (512) 475-9445

State Gopher servers or Mosaic addresses
Texas Government Information Gopher
Department of Information Resources Gopher
Texas General Services administration home page
Texas Secretary of State home page
Texas Department of Information Resources
Technology Assessment Center

K-12 Gopher servers or Mosaic addresses
Texas Educational Network (TENET) Gopher server
Rice University CWIS
The TENET Web
Armadillo: The Texas Studies Gopher
Highland Park Scotties home page (an Austin elementary school)

TX

221

BEST COPY AVAILABLE

Utah

STATE FACTS	Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Number of school districts
40

Number of school buildings
N/A

Number of K-12 teachers
18,790

Number of K-12 students
468,680

Number of students in largest district
79,200

Number of students in smallest district
191

Number of districts that have fewer than 1,000 students
6

223

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Higher education.

State Gopher server or Mosaic home page address **Yes**
The Utah Education Network has a Gopher server. The Internet address is eddy.media.utah.edu.

K-12 Gopher server or Mosaic home page address **Yes**
East High School in the Salt Lake City School District has a Gopher server. The Internet address is leopard.east-slc.edu. The Iron School District in Southern Utah also has a Gopher server. The Internet address is gopher.ic.suu.edu.

Community networks or freenets established in state
See Additional Information.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**
Technology 2000.
See Additional Information.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**
Under development.
See Additional Information.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Vicky L. Dahn

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Regional service centers with well-trained technology specialists are available to assist the rural school districts in their telecommunications implementation. Large school districts are developing in-house expertise in this area.

224

Funding for Educational Networks

Funding sources available

Local District

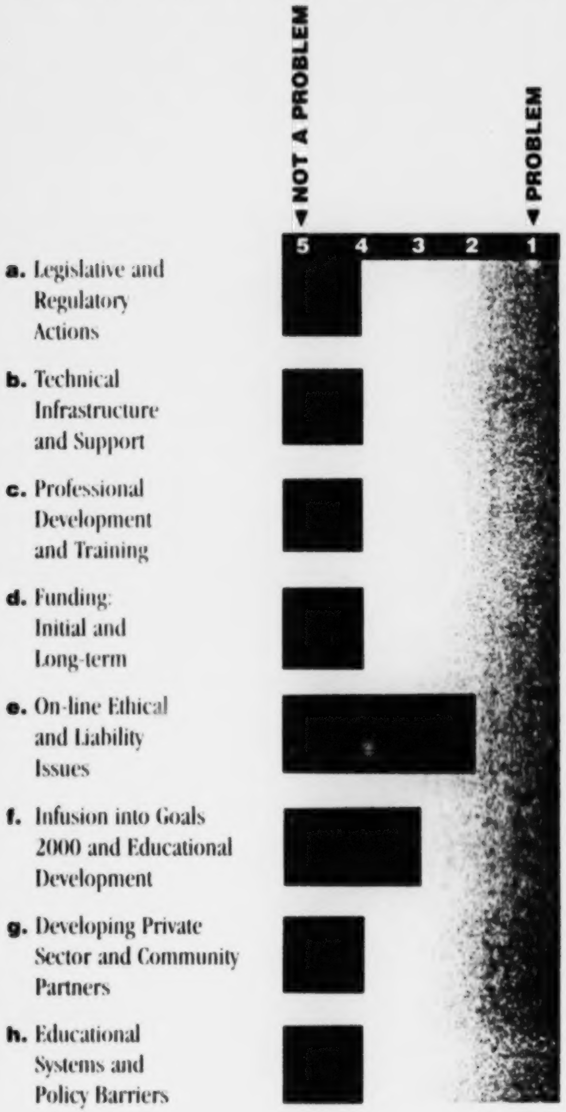
State

Other
See Additional Information

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission
This past legislative session, a new Information Technology Commission was established by the legislature. One of the issues this commission will deal with during the coming year is special telecommunications tariffs for education.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
US WEST.
See Additional Information.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Utah has insufficient clout to impact national policy.

Networking issues or obstacles related to population distribution
One of Utah's greatest challenges with networking deals with the rural nature of the state. Fiber services will be a long time coming and prohibitively expensive in some of our more rural areas.

Other concerns about telecommunications
A great deal of time and attention is being paid to the "pipes." Not enough time and attention is being paid to the K-12 material that will flow through the pipes.

For further information, contact
Dr. Vicky L. Dahn
Utah State Office of Education
250 East 500 South
Salt Lake City, UT 84111
vicky.dahn@sbe.k12.ut.us
(801) 538-7732
Fax (801) 538-7718

ADDITIONAL INFORMATION

State and K-12 Technology Plans Technology 2000 is a broad, multifaceted initiative designed to propel Utah to leadership in the development and application of advanced information technology for state government, public and higher education, citizens, and private businesses.

Utah has been aggressive in building a statewide infrastructure to improve student achievement through integration of technology into the teaching and learning process. Existing legislation is in place that allows all schools and school districts to participate. Governing committees represent state government, public and higher education, local school districts, business and industry, and parents. The infrastructure has been built under the guidance of two entities: the Educational Technology Initiative, providing school and classroom computers and related technology, and the Utah Education Network, responsible for building a statewide telecommunications network.

US WEST has been an aggressive partner in building our state infrastructure. In addition, the independent telephone companies are also upgrading to fiber as quickly as possible.

Community Networks Some private companies offer Internet access for a price; however, we do not know of any collaborations with the state. The State Information Technology department started to offer free Internet access through the toll free state phone line, but retracted that access when it received the first $17,000 phone bill.

Funding Sources **Local District:** technology initiative and local funds. **State:** $5 million (K-12) appropriated for the year beginning July 1.
Other: US WEST has secured corporate funds for deploying fiber.

Vermont*

STATE FACTS	Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Number of school districts
279

Number of school buildings
354

Number of K-12 teachers
6,000

Number of K-12 students
100,000

Number of students in largest district
1,000+ (Single district)

Number of students in smallest district
40-50

Number of districts that have fewer than 1,000 students
N/A

* Two Vermont respondents completed surveys. Their responses to questions have been combined and their barrier ratings are marked A and B. Respondent B rated barriers selectively.

VT

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other

State Gopher server or Mosaic home page address **Yes**
Several Gopher servers in the state but none are state. Close to state: VETC.VSC.edu

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **Yes & No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**
Not yet.

Long-range planning for telecommunications incorporated into state K-12 plans **No**
Not yet.

Goals 2000 planning committee established **Yes**
Yet to be selected completely.

Telecommunications contacts

Greg Martin
Middlebury,VT
gmartin@middlebury.edu

Ed Barry
Milton, VT
barry@lemming.uvm.edu

Sandy Lathem
Hinesburg, VT
slathem@moose.uvm.edu

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**
We have a consortium that is working on professional development, the Vermont Educational Telecommunications Consortium.

Funding for Educational Networks

Funding sources available

Local District

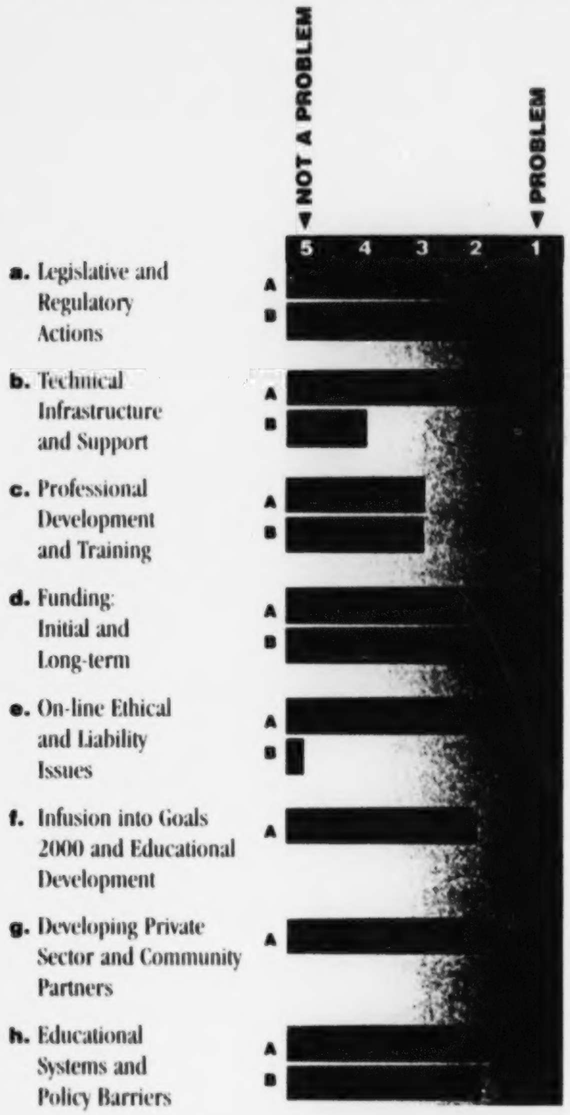
State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**
Currently under discussion.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
NYNEX has started VermontNet—not used much.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Rural areas are not well-served by phone lines.

Networking issues or obstacles related to population distribution
Rural telephone costs. Rural areas are not well-served by phone lines.

Other concerns about telecommunications
No response was provided.

For further information, contact
Frank Watson
Henry Geller
Vermont Institute for Science, Math and Technology
Box 310
Randolph Center, VT 03061-0310
fwatson@ssi.edc.org
hgeller@ssi.edc.org
(802) 728-4108
Fax (802) 728-3026

Virginia*

STATE FACTS	Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Number of school districts
135

Number of school buildings
1,800 (approx.)

Number of K-12 teachers
71,483

Number of K-12 students
1,022,456

Number of students in largest district
133,474

Number of students in smallest district
333

Number of districts that have fewer than 1,000 students
8

Network Development

Information services currently provided by state network **Legislative** Public Utility Commission/ Public Service Commission **State Department of Education** **Other** **Classroom research and educational opportunties.**	
State Gopher server or Mosaic home page address	No
K-12 Gopher server or Mosaic home page address **HTTP://MISTRAL.ENST.** **FRWWW.PEN.K12.VA.US/** **HTTP://KIZMAC.LARC.NASA.** **GOV/HPCCK12HOME.HTM**	Yes
Community networks or freenets established in state **Central Virginia Freenet.**	Yes
They collaborate with the State Department of Education	Yes

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **In development.**	
Long-range planning for telecommunications incorporated into state K-12 plans	Yes
Goals 2000 planning committee established	No
Intermediate educational units are available to assist schools with training for telecommunications implementation **In development.**	

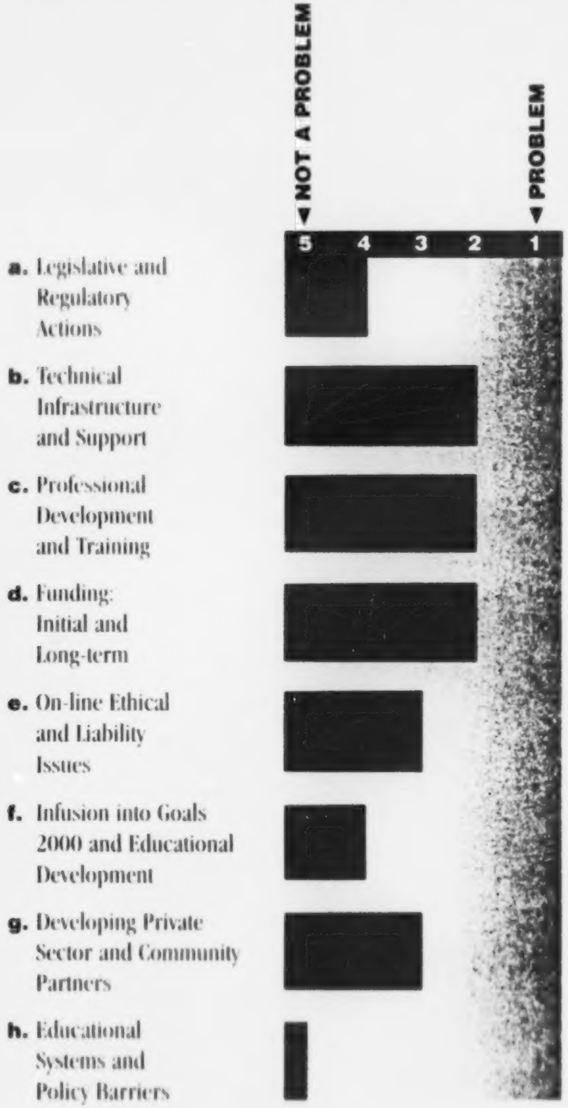
Funding for Educational Networks

Funding sources available **Local District** **State** **Other**	
Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission	No
A major telecommunications provider has a program encouraging infrastructure development in the state	No

---

* Virginia's data were current as of mid-November 1994, two months later than the information reported by other states.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location

Virginia has a larger rural population—very costly to provide service.

Networking issues or obstacles related to population distribution

See above.

Other concerns about telecommunications

Long-term vs. short-term planning that would be responsible to increasing requirements.

For further information, contact

Joe Aulino
Virginia Department of Education
P. O. Box 2120
Richmond, VA 23216
jaulino@pen.K12.va.us
(804) 225-2941
Fax (804) 371-8978

BEST COPY AVAILABLE

Washington

STATE FACTS

Status of State Networks **Operational** **Partially Operational** **Planned** **Proposed** **No Current Plans**

Number of school districts
296

Number of school buildings
1,600

Number of K-12 teachers
45,000

Number of K-12 students
920,000

Number of students in largest district
43,000

Number of students in smallest district
10

Number of districts that have fewer than 1,000 students
50% (approx.)

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Basically Internet-type services.

State Gopher server or Mosaic home page address
No response was provided.

K-12 Gopher server or Mosaic home page address
No response was provided.

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education
Indirectly.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans
I think so.

Long-range planning for telecommunications incorporated into state K-12 plans **Yes**

Goals 2000 planning committee established
No response was provided.

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
State-funded effort at nine Educational Service Districts.

Funding for Educational Networks

Funding sources available

Local District

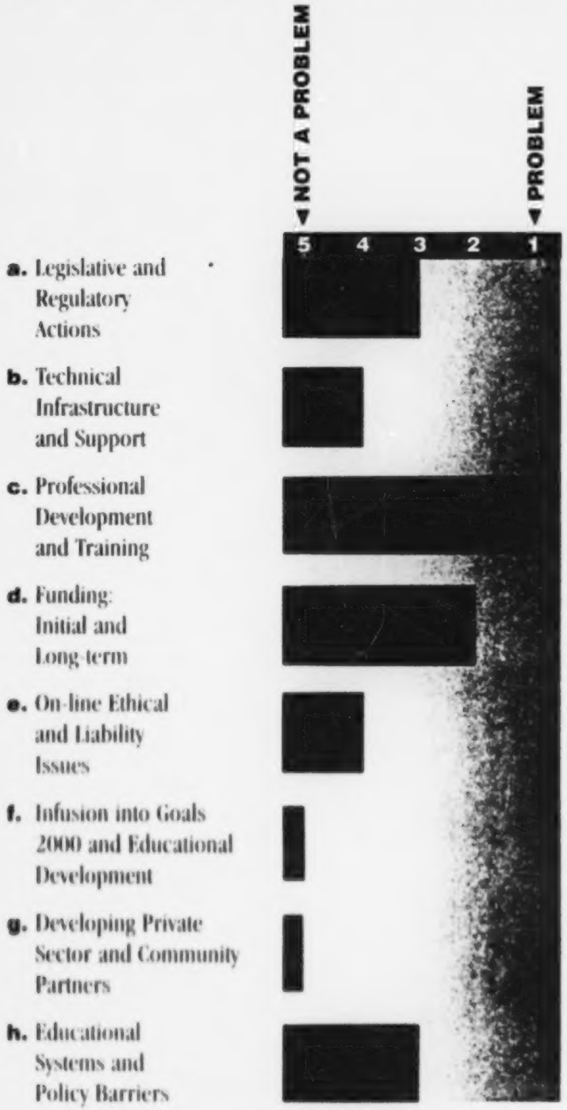
State

Other
Marginal state funding.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**
Carriers file tariffs. The Washington Utilities and Transportation Commission does not create rates.

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Twenty-eight telephone companies.

Networking issues or obstacles related to population distribution
The obvious remote district(s).

Other concerns about telecommunications
The assumption that there is a National Information Infrastructure is a distraction.

For further information, contact
Albert Huff
Washington School Information Processing Cooperative
2000 200th Pl. SW
Lynnwood, WA 98036
ahuff@WSIPC.wednet.edu
(206) 775-8471 ext. 4200
Fax (206) 778-4020

West Virginia

STATE FACTS

Status of State Networks Operational · Partially Operational · Planned · Proposed · No Current Plans

Number of school districts
55

Number of school buildings
901

Number of K-12 teachers
20,900 (Pre-K—12)

Number of K-12 students
313,997 (Pre-K—12)

Number of students in largest district
33,545

Number of students in smallest district
1,146

Number of districts that have fewer than 1,000 students
0

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
Grant info, job openings, distance learning items, higher ed courses, special projects, pen pals, education calendars, Computer Learning Foundation statewide activities, etc.

State Gopher server or Mosaic home page address
Currently being developed.

K-12 Gopher server or Mosaic home page address
Currently being developed.

Community networks or freenets established in state **Yes**
On a very limited basis other than the one operated by the Department of Education. Other networks do collaborate [with the Department of Education].

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **Yes**

Long-range planning for telecommunications incorporated into state K-12 plans
In progress.

Goals 2000 planning committee established **Yes**
See Additional Information.

Telecommunications contact
Brenda Williams

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
In some areas, depending on the workload with other statewide technology implementation.

Funding for Educational Networks

Funding sources available

Local District

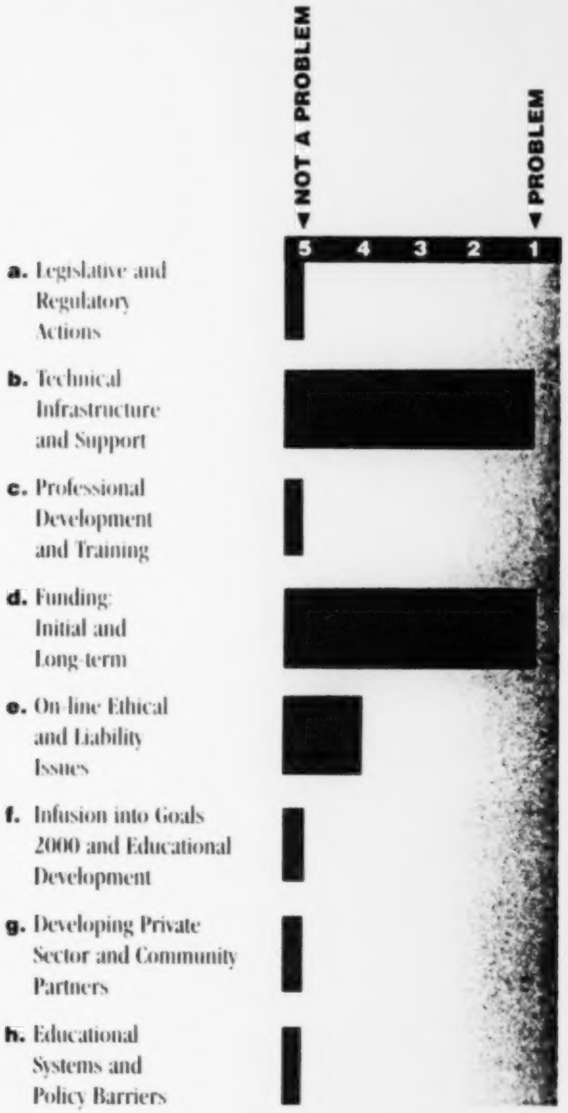
State

Other
Some federal programs and grants.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**
But they have been working with us on contract prices.

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
Bell Atlantic has started a World School project that provides 56KB frame relay services to all schools in their service area, which is about 85 percent of the state. This project will provide the schools with a router, software packages, and installation.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Trying to work with smaller, local telcos.

Networking issues or obstacles related to population distribution
Many times local area networking is not installed with the telecommunications plan.

Other concerns about telecommunications
New federal legislation and FCC regulations—how will they affect our plans and costs?

For further information, contact
Brenda Williams
West Virginia Department of Education
1900 Kanawha Blvd., East
Building 6, Room 346
Charleston, WV 25305
brendaw@wvnvm.wvnet.edu
(304) 558-7880
Fax (304) 558-2584

ADDITIONAL INFORMATION

Status of West Virginia's computer networks
Operational—but being updated to allow Internet access.

The original Goals 2000 team consists of three people appointed by the State Superintendent's Office and three by the Governor's Office. They represent the State Department of Education, Governor's Office, teachers, parents, and business. Additional advisory and subcommittees are also being utilized.

Wisconsin

STATE FACTS

Status of State Networks	Operational	Partially Operational	Planned	Proposed	No Current Plans

Number of school districts
427

Number of school buildings
2,034

Number of K-12 teachers
51,011

Number of K-12 students
844,001

Number of students in largest district
95,259

Number of students in smallest district
59

Number of districts that have fewer than 1,000 students
107

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
Education statistics, special interest groups, e-mail, downloadable resource documents, state education agency calendar, publications ordering service.

State Gopher server or Mosaic home page address **Yes**
badger.state.wi.us

K-12 Gopher server or Mosaic home page address **No**
None to my knowledge.

Community networks or freenets established in state **Yes**

They collaborate with the State Department of Education **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans
The Department of Administration is conducting a major telecom study to do this.

Long-range planning for telecommunications incorporated into state K-12 plans
Plans are being drawn up now.

Goals 2000 planning committee established **Yes**

Telecommunications contact
Gordon Hanson staff, Bill Wilson

Intermediate educational units are available to assist schools with training for telecommunications implementation **Yes**
Cooperative Educational Service Agencies (CESA) are available throughout the state—12 total.

Funding for Educational Networks

Funding sources available

Local District

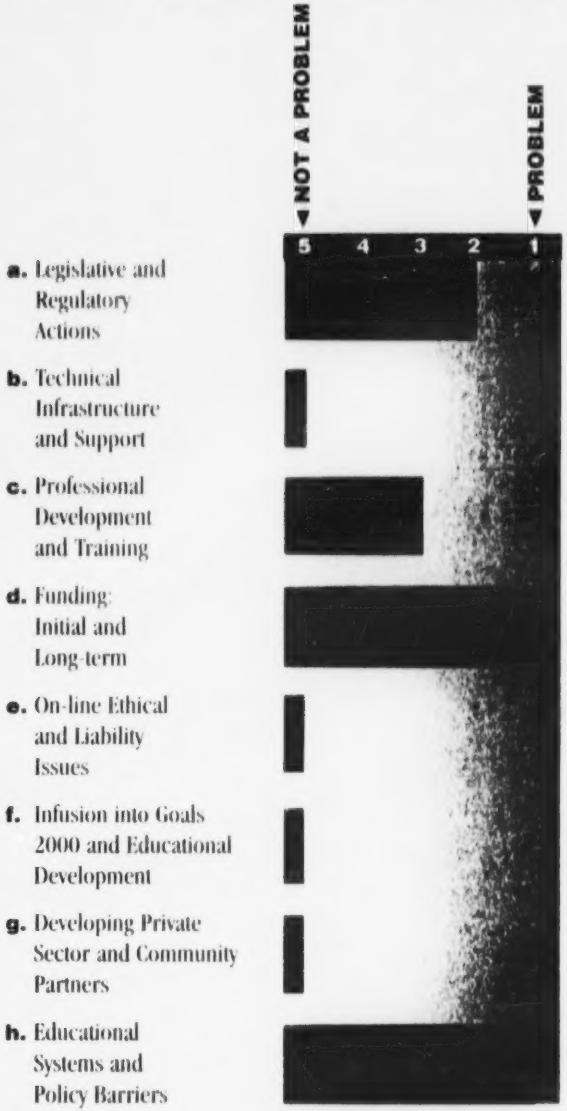
State

Other

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **Yes**

A major telecommunications provider has a program encouraging infrastructure development in the state **Yes**
The Department of Administration, Education Communications Board, and WISCNet in the public sector, Ameritech in the private sector.

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
Lack of access to the Internet.

Networking issues or obstacles related to population distribution
Many rural school districts do not have toll-free access to an Internet node without long distance phone charges, if they have access at all.

Other concerns about telecommunications
No response was provided.

For further information, contact
Gordon Hanson
Wisconsin Department of Public Instruction
125 S. Webster St.
Madison, WI 53702
HANSONGP@MACC.WISC.EDU
(608) 266-7112
Fax (608) 267-1052

Wyoming

STATE FACTS

Number of school districts	**49**
Number of school buildings	**422**
Number of K-12 teachers	**6,675**
Number of K-12 students	**100,899**
Number of students in largest district	**14,077**
Number of students in smallest district	**35**
Number of districts that have fewer than 1,000 students	**24**

Status of State Networks* Operational Partially Operational Planned Proposed No Current Plans

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other

None.

State Gopher server or Mosaic home page address **Yes**

State Gopher: farrat.state.wy.us.

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state

State Education Agency collaborates with State Telecomm.

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

None.

Long-range planning for telecommunications incorporated into state K-12 plans **No**

None.

Goals 2000 planning committee established

In discussion.

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

None.

Funding for Educational Networks

Funding sources available

Local District

State

Other

Foundations; federal funds.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

None.

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

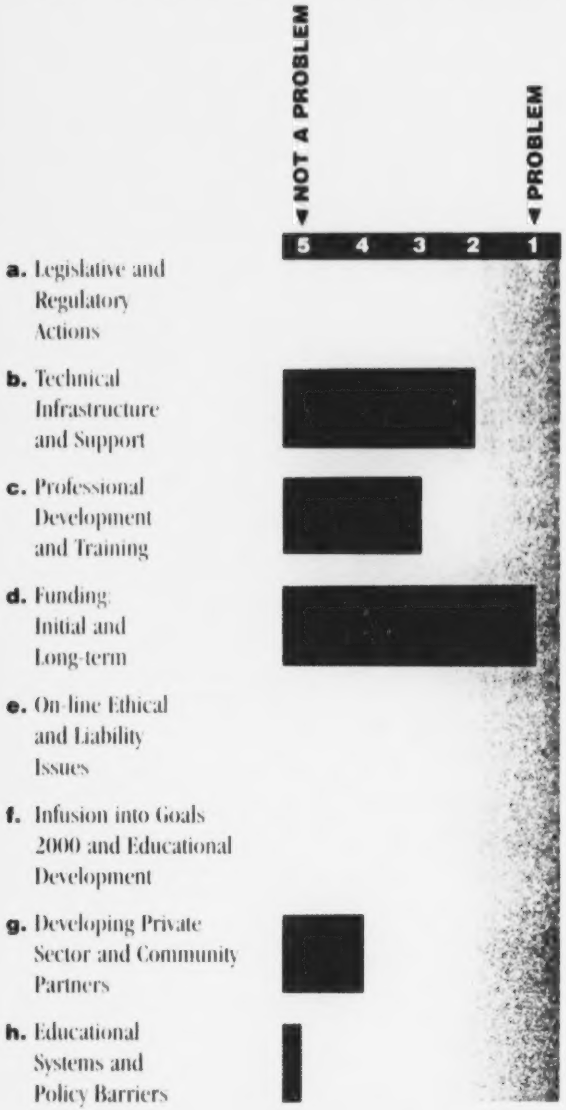
None.

---

* The Wyoming respondents did not provide a status classification. They rated barriers selectively.

BEST COPY AVAILABLE

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
No access to the Internet.

Networking issues or obstacles related to population distribution
Rural and mountain terrain.

Other concerns about telecommunications
True integration of technology into education.

For further information, contact
Steve King
Wyoming Department of Education
2300 Capitol Ave.
Cheyenne, WY 82002
sking@educ.state.wy.us
(307) 777-6245
Fax (307) 777-6234

ADDITIONAL INFORMATION

All districts are linked by e-mail.

The Commonwealth

STATE FACTS

Number of school districts
100

Number of school buildings
1,600

Number of K-12 teachers
38,381

Number of K-12 students
650,000

Number of students in largest district
10,968

Number of students in smallest district
1,691

Number of districts that have fewer than 1,000 students
0

Status of State Networks | **Operational** | **Partially Operational** | **Planned** | **Proposed** | **No Current Plans**

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/ Public Service Commission

State Department of Education

Other
N/A.

State Gopher server or Mosaic home page address **No**

K-12 Gopher server or Mosaic home page address **No**

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Long-range planning for telecommunications incorporated into state K-12 plans **No**

Goals 2000 planning committee established
Is in selection process.

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

State

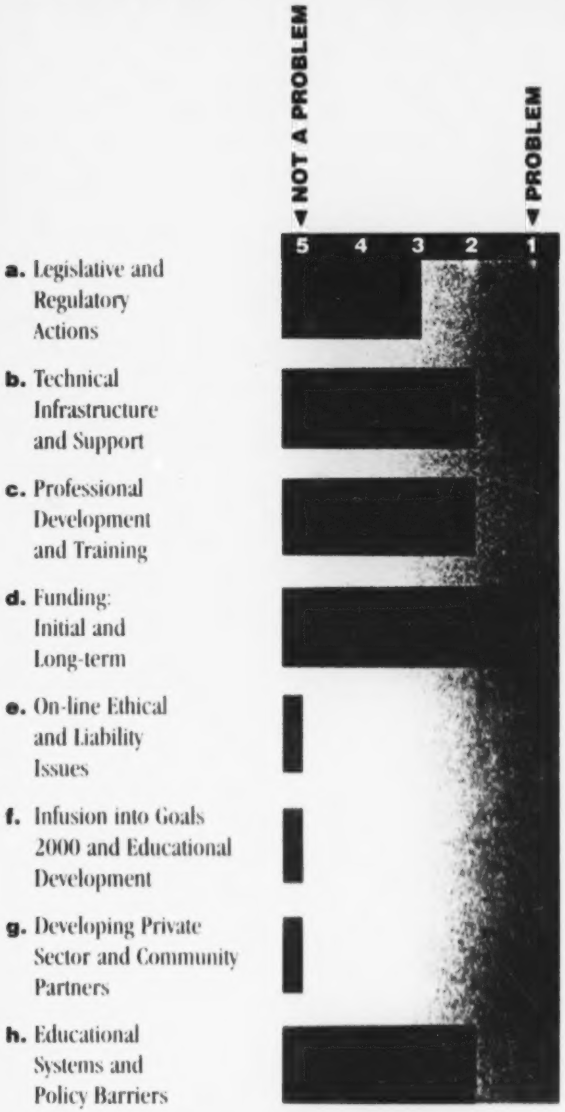
Other
National Science Foundation.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state **No**

# of Puerto Rico

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
N/A.

Networking issues or obstacles related to population distribution
N/A.

Other concerns about telecommunications
No response was provided.

For further information, contact
Herman Acuña
Resource Center for Science and Engineering
University of Puerto Rico
P.O. Box 23334 University Station
San Juan, PR 00931-3334
H_ACUNA@UPR1.UPR.CLU.EDU
(809) 765-5170
Fax (809)756-7717

ADDITIONAL INFORMATION

The U.S. Bureau of

STATE FACTS

Number of school districts	**26**
Number of school buildings	**186**
Number of K-12 teachers	**2,500**
Number of K-12 students	**46,000**
Number of students in largest district	**5,000**
Number of students in smallest district	**300**
Number of districts that have fewer than 1,000 students	**20**

Status of State Networks Operational · Partially Operational · Planned · Proposed · No Current Plans

Network Development

Information services currently provided by state network

Legislative

Public Utility Commission/Public Service Commission

State Department of Education

Other
Math and Science and News for Teachers and Administrators.

State Gopher server or Mosaic home page address
In the development stage—should be working in the next 45 days.

K-12 Gopher server or Mosaic home page address **No**
None.

Community networks or freenets established in state **No**

Technology Plans

Long-range planning for telecommunications incorporated into state technology plans **No**

Long-range planning for telecommunications incorporated into state K-12 plans **No**

Goals 2000 planning committee established **Yes**

Telecommunications contacts
Peter Camp, Charles Geboe, Sandra Fox, Roger Bordeaux, Carmen Taylor, William Mehojah

Intermediate educational units are available to assist schools with training for telecommunications implementation **No**

Funding for Educational Networks

Funding sources available

Local District

State

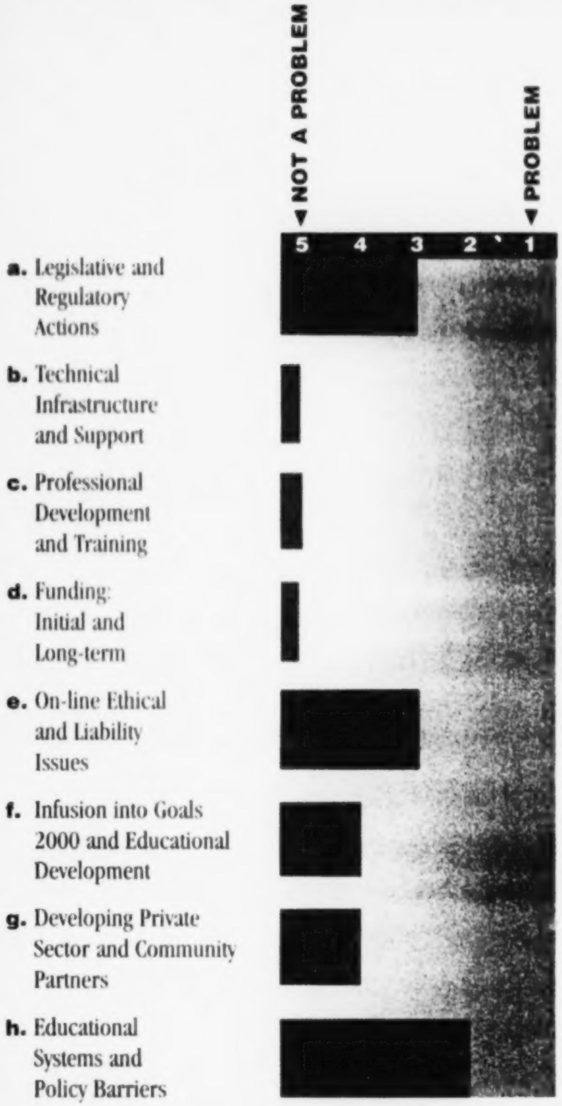
Other
Federal.
See Additional Information.

Special telecommunications tariffs for education established by the Public Utility Commission/Public Service Commission **No**

A major telecommunications provider has a program encouraging infrastructure development in the state
Discussing with US WEST.

Indian Affairs

POTENTIAL BARRIERS TO STATE NETWORKS



Networking issues or obstacles related to regional location
We are in isolated, rural areas and have problems with telephone lines that are inadequate.

Networking issues or obstacles related to population distribution
Same as above.

Other concerns about telecommunications
Need to know what are the accepted standards for staff training, computers per student, budget for technology support. In our planning what standards should be used for developing a telecommunications program?

For further information, contact
William Mehojah, Jr.
Bureau of Indian Affairs
Office of Indian Education Programs
1849 C St. NW MS-3512-MIB
Washington, DC 20240
(202) 208-6175
Fax (202) 208-3312

BEST COPY AVAILABLE

ADDITIONAL INFORMATION

We are a federally funded school system.

III. Appendices

BEST COPY AVAILABLE

Persons Responsible for Setting Up K-12 Networks

Alabama

Dr. Ron Wright
Alabama State Department
of Education
3317 Gordon Persons Bldg.
50 N. Ripley St.
Montgomery, AL 36130
PHONE (205) 242-8071
FAX (205) 242-0482
E-MAIL WRIGHTJ@AOL.COM

Alaska

Karen Rehfeld
Administrative Services
Alaska Department of Education
801 W. 10th St., Ste. 200
Juneau, AK 99801-1894
PHONE (907) 465-8650

Arizona

Alex Belous
Arizona Department of Education
1535 W. Jefferson St.
Phoenix, AZ 85007
PHONE (602) 542-5080
FAX (602) 542-3590
E-MAIL abelous@ade.state.az.us

Arkansas

Bob Friedman
Arkansas Public School
Computer Network
#4 State Capitol Mall, Rm. 401a
Little Rock, AR 72201
PHONE (501) 682-5035
E-MAIL Bobf@apscn.K12.ar.us

California

Carole Teach
K-12 Network Planning
721 Capital Mall, 3rd Floor
Sacramento, CA 95814
PHONE (916) 654-9662
FAX (916) 657-3707
E-MAIL cteach@goldmine.cde.ca.gov

Colorado

Eric Feder
Colorado Department of Education
201 E. Colfax
Denver, CO 80203
PHONE (303) 866-6859
FAX (303) 830-0793
E-MAIL efeder@csn.org

Connecticut

Mitch Chester
Bureau of Curriculum and
Instructional Programs
Connecticut State Department of
Education
165 Corporate Ave.
Hartford, CT 06106
PHONE (203) 566-5871
FAX (203) 566-5623

Delaware

No response

Florida

Bill Schmid
Florida Information Resource
Network (FIRN)
325 W. Gaines St., B1-14
Tallahassee, FL 32399
PHONE (904) 487-8656
FAX (904) 488-3691
E-MAIL schmidb@mail.firn.edu

Georgia

Bailey Mitchell
Georgia Department of Education
Instructional Technology
1752 Twin Towers East
Atlanta, GA 30334-5080
PHONE (404) 656-2521
FAX (404) 656-7617
E-MAIL bmitchel@mordred.gatech.edu

Hawaii

K. Kim
Department of Education
State of Hawaii
1390 Miller St.
Honolulu, HI 96813
PHONE (808) 586-3211
FAX (808) 586-3227
E-MAIL kkim@kalama.doe.hawaii.edu

Idaho

Jim Marconi
Bureau of Computer Services
Department of Education
P. O. Box 83720
Boise, ID 83702-0082
PHONE (208) 334-3236
FAX (208) 334-2228
E-MAIL jjmarcon@sde.state.id.us

Illinois

Frank Whitney
Illinois State Board of Education
100 N. First, S395
Springfield, IL 62777
PHONE (217) 782-4313
FAX (217) 782-4550
E-MAIL fwhitney@eagle.sangamon.edu

Indiana

Mike Hoffman
Indiana Department of Education
Rm. 229, State House
Indianapolis, IN 46204-2798
PHONE (317) 232-0808
FAX (317) 233-6326
E-MAIL
mhoffman@ideanet.doe.state.in.us

Iowa

Pam Johnson
Iowa Public Television
6450 Corporate Dr.
Johnston, IA 50131
PHONE (515) 242-4180
FAX (515) 242-3155
E-MAIL pjohnson@po-1.star.k12.ia.us

Iowa, continued

Greg Fay
Iowa Department of Education
Grimes State Office Bldg.
Des Moines, IA 50319
PHONE (515) 242-6176
FAX (515) 242-5988

Kansas

No person at the State Education Department directly assigned the responsibility.

Kentucky

David Couch
Systems Support Services
Kentucky Department of Education
15 Fountain Place
Frankfort, KY 40601
PHONE (502) 564-2020 ext. 229
FAX (502) 564-7884
E-MAIL DCOUCH@ZEUS.ED.KY.US

Louisiana

Barbara Andrepont
Bureau of Management
Information Systems
Louisiana Department of Education
3455 Florida Blvd.
Baton Rouge, LA 70806
PHONE (504) 342-0091
FAX (504) 342-1912
E-MAIL
BAndrepont%ED@mail.doe.state.la.us

Maine

Robert B. Kautz
Department of Education
State House Station #23
Augusta, ME 04333
PHONE (207) 287-5929
FAX (207) 287-2927

Maryland

Gregory Talley
Maryland State Department
of Education
200 W. Baltimore St.
Baltimore, MD 21201-2595
PHONE (410) 333-2632
FAX (410) 333-2026
E-MAIL gtalley@umd5.edu

Massachusetts

George Dixon
Massachusetts Corporation for
Educational Telecommunications
(MCET)
38 Sidney St., Ste. 300
Cambridge, MA 02139
PHONE (617) 621-0290
FAX (617) 621-0291
E-MAIL Dixon@MCET.mass.edu

Michigan

Dan Schultz
Assistant Superintendent for
Technology and Grants
P. O. Box 30008
Lansing, MI 48909
PHONE (517) 373-6331
FAX (517) 373-3325
E-MAIL 20506DWS@MSU.EDU

Minnesota

Mark Manning
Minnesota Department of Education
550 Cedar St.
St. Paul, MN 55101
PHONE (612) 297-3151
FAX (612) 297-1795
E-MAIL MANNIN@TIES.K12.MN.USA

Mississippi

Nathan Slater
Mississippi Department of Education
P. O. Box 771
Jackson, MS 39205
PHONE (601) 359-3487
FAX (601) 359-2027
E-MAIL NS1@RA.MSSTATE.EDU

Missouri

Susan Cole
Missouri Department of Elementary
and Secondary Education
P. O. Box 480
Jefferson City, MO 65101
PHONE (314) 751-3175
FAX (314) 751-3494
E-MAIL SCOLE1@services.dese.mo.us

Montana

Steve Meredith
Office of Public Instruction
P. O. Box 202501
Helena, MT 59620
PHONE (406) 444-3563
FAX (406) 444-3924
E-MAIL
steve.meredith.%metnet@bigsky.
dillon.mt.us

Nebraska

Wayne Fisher
Nebraska Department of Education
P. O. Box 94987
Lincoln, NE 68509-4987
PHONE (402) 471-2085
FAX (402) 471-0117
E-MAIL fisher@nde4.nde.state.ne.us

Nevada

Lin Forrest
Nevada Department of Education
400 W. King St., Capitol Complex
Carson City, NV 89710
PHONE (702) 687-3136
FAX (702) 687-5660
E-MAIL lforrest@nsn.scs.unr.edu

New Hampshire

No response

New Jersey

Ted Smorodin
New Jersey Department of Education
C N 500-240 W. State St.
Trenton, NJ 08625
PHONE (609) 984-7452
FAX (609) 292-7276

New Mexico

Kurt Steinhaus
Technology Unit
New Mexico Department of Education
300 Don Gaspar
Santa Fe, NM 87501-2786
PHONE (505) 827-6648
FAX (505) 827-6696
E-MAIL SCHLSTEIN@TECHNET.NM.ORG

New York

Dr. Michael Radlick
New York State Education
Department
Rm. 967 EBA
Albany, NY 12234
PHONE (518) 473-9106
FAX (518) 486-5275

North Carolina
Elsie L. Brumback
North Carolina Department
of Public Instruction
301 N. Wilmington St.
Raleigh, NC 27601-2825
PHONE (919) 715-1530
FAX (919) 733-4762
E-MAIL ebrumbac@dpi.state.nc.us

North Dakota
None.

Ohio
Dan Brown
Ohio Department of Education
2151 Carmack Rd.
Columbus, OH 43221
PHONE (614) 466-7000
FAX (614) 466-0022
E-MAIL ADMIN_BROWN@ODE.OHIO.GOV

Oklahoma
John Curran
Oklahoma State Department
of Education
2500 N. Lincoln Blvd.
Oklahoma City, OK 73105-4599
PHONE (405) 521-3994
FAX (405) 521-6205
E-MAIL jcurran@phoenix.osrhe.edu

Oregon
Tom Cook
Oregon Department of Education
255 Capitol St. N.E.
Salem, OR 97310
PHONE (503) 378-3310
FAX (503) 378-5156
E-MAIL tom.cook@state.or.us

Pennsylvania
Wally Leech
Pennsylvania Department
of Education
333 Market St.
Harrisburg, PA 17126-0333
PHONE (717) 783-9806
FAX (717) 783-5420
E-MAIL LEECH@HSLC.ORG

Rhode Island
William J. Fiske
Rhode Island Department of Education
22 Hayes St., Rm. B-4
Providence, RI 02908
PHONE (401) 277-2821
FAX (401) 351-7874
E-MAIL Fiske@K12.Brown.Edu

South Carolina
Ted Lightle
Budget Control Board
Office of Information Resources
AT&T Building, Ste. 930
Columbia, SC 29201
PHONE (803) 737-0070
FAX (803) 737-0069
E-MAIL WPO{LIGHTLE}@GMO.STATE.US

South Dakota
Harris Haupt and Randy Foudray
Technology and Innovations
in Education (TIE)
1925 Plaza Blvd.
Rapid City, SD 57702-9357
PHONE (605) 394-1876
FAX (605) 394-5315
E-MAIL rfoudray@silver.sdsmt.edu

Tennessee
Roger D. Pelham
State Department of Education
Office of Technology
E-MAIL rpelham@tbr.state.tn.us

Texas
Anita Givens
Texas Education Agency
1701 N. Congress Ave.
Austin, TX 78701
PHONE (512) 463-9400
FAX (512) 463-9090
E-MAIL agivens@tenet.edu

Utah
Steve Hess
Utah Education Network
Eccles Broadcast Center
101 Wasatch Dr.
Salt Lake City, UT 84112
PHONE (801) 581-6180
FAX (801) 581-5735
E-MAIL shess@media.utah.edu

Vermont
Bruce Richardson
State Department of Education
120 State St.
Montpelier, VT 05602-2501
PHONE (802) 828-3121
FAX (802) 828-3140
E-MAIL brichard@ssi.edc.org

Virginia
Al Kincel
Department of Education
101 N. 14th St.
Richmond, VA 23216
PHONE (804) 225-2954
FAX (804) 371-8978
E-MAIL AKINCEL@PEN.K12.VA.US

Washington
Cheryl Lemke
Office of Superintendent of
Public Instruction
Olympia, WA
PHONE (206) 753-1700

West Virginia
Brenda Williams
West Virginia Department of
Education
1900 Kanawha Blvd. E., Bldg. 6,
Rm. 346
Charleston, WV 25305
PHONE (304) 558-7880
FAX (304) 558-2584
E-MAIL brendaw@wvnvm.wvnet.edu

Wisconsin
Ken Adler
Wisconsin Department of
Public Instruction
125 S. Webster St.
Madison, WI 53702
PHONE (608) 266-7049
FAX (608) 269-1052

Wyoming
Steve King
Wyoming Department of Education
2300 Capitol Ave.
Cheyenne, WY 82002
PHONE (307) 777-6245
FAX (307) 777-6234
E-MAIL sking@educ.state.wy.us

Puerto Rico
Not available.

U.S. Bureau of Indian Affairs
Jim Womack
Bureau of Indian Affairs
Office of Indian Education Programs
1849 C St., N.W. MS-3512-MIB
Washington, DC 20240
PHONE (202) 208-6175
FAX (202) 208-3312

APPENDIX 2

Major Network Service Providers for K-12 Education by State

Alabama

Dr. Ron Wright
Alabama State Department
of Education
3317 Gordon Persons Bldg
50 N. Ripley St.
Montgomery, AL 36130
PHONE (205) 242-8071
FAX (205) 242-0482
E-MAIL WRIGHTRJ@AOL.COM

Alaska

Alys Orsborn
University of Alaska
Computer Network
University of Alaska, Fairbanks
Fairbanks, AK 99775
PHONE (907) 474-5310
FAX (907) 474-6964
E-MAIL sxao@orca.a1m.alaska.edu

Arizona

Matt Whittington
Arizona Department of
Administration, Telecommunications
1510 W. Adams
Phoenix, AZ 85007
PHONE (602) 542-6300
FAX (602) 542-9900

Brian Miller
US WEST
8900 N. 22nd Ave., Ste. 110
Phoenix, AZ 85021
PHONE (602) 861-4254

Arkansas

Arkansas Public School
Computer Network
#4 State Capitol Mall, Rm. 401A
Little Rock, AR 72201

California

Paul Baer
Bay Area Regional Research Network
(BARRNet)
701 Welch Rd., Bldg. A, Ste. 3320
Palo Alto, CA 94304
PHONE (415) 725-1790 or
(800) 662-4770
E-MAIL info@barrnet.net

Colorado

John Carrol
US WEST
1801 California
Denver, CO 80203
PHONE (303) 391-8580

Connecticut

Tom Buckley
Education Relations
SNET
9th Floor, 227 Church St.
New Haven, CT 06510
PHONE (203) 771-3115
FAX (203) 865-5198
E-MAIL
BUCKLEY1@BIOMED.MED.YALE.EDU

Delaware

No response

Florida

Florida Information
Resource Network
325 W. Gaines St.
Tallahassee, FL 32399

Georgia

Jerry Segals
Cathy Cruger
PeachNet
Regents Telecommunications
and Networking
P. O. Box 444
Marietta, GA 30061
PHONE (404) 423-6860
FAX (404) 423-6868
E-MAIL Jerry@PeachNet.EDU
Cathy@PeachNet.EDU

Hawaii

Phyllis Morihara
GTE Hawaiian Tel
P. O. Box 2200
Honolulu, HI 96841
PHONE (808) 546-8736
FAX (808) 546-8288

Mike Goodish
Oceanic Cablevision
200 Akamainui St.
Mililani, HI 96789-3999
PHONE (808) 625-8355
FAX (808) 625-5888

Idaho

Not available.

Illinois

No organization available.

Indiana

Ed Tully
Indiana Higher Education
Telecommunications Systems
957 W. Michigan St.
Indianapolis, IN 46202-5184
PHONE (317) 263-8900
FAX (317) 263-8831
E-MAIL tully@ind.net

Iowa

Tony Crandell
Department of General Services
Hoover State Office Bldg.
Des Moines, IA 50319
PHONE (515) 281-6299
FAX (515) 281-5962

Kansas

Andrew Scharf
Department of Information Systems
and Communications
State of Kansas
900 S.W. Jackson
Topeka, KS 66612
PHONE (913) 296-3463
FAX (913) 296-6009

Russ Phelps
Southwestern Bell Telephone
220 E. 6th, Rm. 110
Topeka, KS 66603
PHONE (913) 276-5707
FAX (913) 276-8823

Kentucky

David Ballard
Department of Information Systems
101 Cold Harbor Dr.
Frankfort, KY 40601
PHONE (502) 564-8703
FAX (502) 564-6856
E-MAIL
DBALLARD@MSMAIL.STATE.KY.US

Louisiana

LANET

Louisiana Division of Administration, Office of Telecommunications Management (OTM)

Leased line SNA network

Maine

Robert Shafto
Maine Center of Educational Services
223 Main St., P. O. Box 620
Auburn, ME 04212-0620
PHONE (207) 783-0833
FAX (207) 783-9701

Cindy Mitchell
University of Maine System
Computer Center, Neville Hall
Orono, ME 04469-5752
PHONE (207) 581-3501

Maryland

John T. Everett
Bell Atlantic
1 E. Pratt St.
Baltimore, MD 21202-1038
PHONE (410) 393-7459
FAX (410) 539-4370

Massachusetts

Ann von der Lippe
Massachusetts Education Computer Network
75 Arlington St., Rm. 500
Boston, MA 02116
PHONE (617) 727-9500
FAX (617) 727-0778
E-MAIL avdlippe@mecn.mass.edu

Michigan

Public universities via telephone companies.

Minnesota

Jim Sydow
Technology and Information Educational Services
W. County Road B-2
Roseville, MN 55113
PHONE (612) 638-8781

Mississippi

South Central Bell

Missouri

Dr. Bill Mitchel
MOREnet
1805 W. Walnut
Columbia, MO 65201
PHONE (314) 882-2000
FAX (314) 884-5240
E-MAIL Bill@more.net

Montana

Steve Meredith
Office of Public Instruction
P. O. Box 202501
Helena, MT 59620
PHONE (406) 444-3563
FAX (406) 444-3924
E-MAIL
steve.meredith.%metnet@bigsky.dillon.mt.us

Nebraska

Through 19 Educational Service Units.

Nevada

Lin Forrest
Nevada School Network
400 W. King St., Capitol Complex
Carson City, NV 89710
PHONE (702) 687-3136
FAX (702) 687-5660
E-MAIL lforrest@nsn.scs.unr.edu

New Hampshire

None.

New Jersey

Sergio Heker
Global Enterprise Services, Inc.
3 Independence Way
Princeton, NJ 08540
PHONE (609) 897-7300
FAX (609) 897-7310
E-MAIL heker@jvnc.net

New Mexico

Terry Bolanger
Marianne Granoff
New Mexico Technet
4100 Osuna N.E., Ste. 103
Albuquerque, NM 87109
PHONE (505) 345-6555
FAX (505) 345-6559
E-MAIL Bolanger@Technet. NM.ORG
Granoff@Technet.NM.ORG

New York

Steve Kohn
NYNEX-Educational Markets
1095 Avenue of the Americas
New York, NY 10036
PHONE (212) 395-2255
FAX (212) 764-3527

North Carolina

Richard Kelly
State Information Processing Services
3700 Wake Forest Rd.
Raleigh, NC 27609
PHONE (919) 981-5126
FAX (919) 850-2827
E-MAIL RKelly@SIPS.state.nc.us

North Dakota

Jim Heck
NDIN
600 East Blvd.
Bismarck, ND 58505
PHONE (701) 328-3190
FAX (701) 328-3000
E-MAIL HECK@PIONEER.STATE.ND.US

Ohio

Tim Steiner
Ohio Department of
Administrative Services
30 E. Broad St.
Columbus, OH 43266-0409
PHONE (614) 466-6920
FAX (614) 644-9152

Oklahoma

Mike Erhart
ONENET
2500 N. Lincoln Blvd.
Oklahoma City, OK 73105
PHONE (405) 524-9210
E-MAIL Mike@phoenix.osrhe.edu

Oregon

Ray Lewis
ED-NET
7140 S.W. Nacadam Ave., Ste. 260
Portland, OR 97129
PHONE (503) 293-1992
FAX (503) 293-1989
E-MAIL RAY.LEWIS@STATE.OR.US

Pennsylvania

Joseph Scorza
Health Science Library Consortium
(HSLC)
3600 Market St., Ste. 550
Philadelphia, PA 19104-2646
PHONE (215) 222-1532
FAX (215) 222-0416
E-MAIL SCORZA@HSLC.ORG

Rhode Island

Dexter Merry
WSBE, Channel 36
50 Park Lane
Providence, RI 02907
PHONE (401) 277-3636
FAX (401) 277-3407
E-MAIL DMerry@LIWSBE.LL.PBS.ORG

Andy Green
IDS World Network
3 Franklin Rd.
Greenwich, RI 02818
PHONE (401) 884-7856
E-MAIL green@ids.net

South Carolina

Ted Lightle
Budget and Control Board
Office of Information Resources
AT&T Building, Ste. 930
Columbia, SC 29201
PHONE (803) 737-0070
FAX (803) 737-0069
E-MAIL
WPO{LIGHTLE}@GMO.STATE.SC.US

South Dakota

Technology and Innovations
in Education (TIE)
1925 Plaza Blvd.
Rapid City, SD 57702-9357
PHONE (605) 394-1876
FAX (605) 394-5315

Tennessee

State of Tennessee
Department of Finance and
Administration
511 Union St., Ste. 1020
Nashville, TN 37243-0288
PHONE (615) 741-3700
FAX (615) 741-6164

Texas

Connie Stout
Texas Education Network (TENET)
Pickle Research Center
The University of Texas at Austin
10100 Burnet Rd.
Austin, TX 78758-4497
PHONE (512) 475-9419
FAX (512) 475-9445
E-MAIL cstout@tenet.edu

Utah

Steve Hess
Utah Education Network
Eccles Broadcast Center
101 Wasatch Dr.
Salt Lake City, UT 84112
PHONE (801) 581-6180
FAX (801) 581-5735
E-MAIL shess@media.utah.edu

Vermont

Harry Miller and David Usher
NYNEX
Hineburg Rd.
South Burlington, VT 05405
E-MAIL Millerhr@vtnet.com
Usherdj.@vtnet.com

Virginia

Al Kincel
Department of Education
101 N. 14th St.
Richmond, VA 23216
PHONE (804) 225-2954
FAX (804) 371-8978
E-MAIL AKINCEL@PEN.K12.VA.US

Washington

Albert Huff
Washington School Information
Processing Cooperative
2000 200th Pl. S.W.
Lynnwood, WA 98036
PHONE (206) 775-8471
FAX (206) 778-4020
E-MAIL ahuff@wsipc.wednet.edu

West Virginia

Jerry Bryan or Bonnie Lynch
WVNET
837 Chestnut Ridge Rd.
Morgantown, WV 26505
PHONE (304) 293-5192
FAX (304) 293-5540
E-MAIL blynch@access.k12.wv.us

Wisconsin

No response

Wyoming

None.

Puerto Rico

Not available.

U. S. Bureau of Indian Affairs

U.S. Bureau of Indian Affairs
Office of Indian Education Programs
1849 C St. N.W. MS-3512-MIB
Washington, DC 20240
PHONE (202) 208-6175
FAX (202) 208-3312

BEST COPY AVAILABLE

Major Internet Service Providers for K-12 Education by State

Alabama

Wayne Whitmore
Alabama Supercomputer Authority
686 Discovery Rd.
Huntsville, AL 35806
PHONE (205) 971-7408
FAX (205) 971-7473
E-MAIL ASAWNW01@ASNMAIL.ASC.EDU

Alaska

Alys Osborn
University of Alaska
Computer Network
University of Alaska, Fairbanks
Fairbanks, AK 99775
PHONE (907) 474-5310
FAX (907) 474-6964
E-MAIL sxao@orca.a1m.alaska.edu

Arizona

Dr. Bill Lewis
Arizona State University
Box 870101
Tempe, AZ 85287-0101
PHONE (602) 965-9059
E-MAIL blewis@asu.edu

Arkansas

Arkansas Public School
Computer Network
#4 State Capitol Mall, Rm. 401A
Little Rock, AR 72201

California

Chris Taylor
CSUnet, California State University
Information Resources and
Technology
4665 Lampson Ave.
Los Alamitos, CA 90720
PHONE (310) 985-9669
E-MAIL chris@csu.net

Colorado

Guy Cook
Colorado SuperNet
999 18th St., Ste. 2640
Denver, CO 80202
PHONE (303) 296-8224
E-MAIL gcook@csn.org

Connecticut

Various local colleges.

Al Hopkins
ACES
205 Skiff St.
Hamden, CT 06517
PHONE (203) 248-9119

Richard Akroyd
State Library
Connecticut State Library
231 Capitol Ave.
Hartford, CT 06106
PHONE (203) 566-4301

Delaware

No response

Florida

Florida Information Resource
Network (FIRN)
325 W. Gaines St.
Tallahassee, FL 32399

SURANET

Georgia

Jerry Segals
Cathy Cruger
PeachNet
Regents Telecommunications
and Networking
P. O. Box 444
Marietta, GA 30061
PHONE (404) 423-6860
FAX (404) 423-6868
E-MAIL Jerry@PeachNet.EDU
Cathy@PeachNet.EDU

Hawaii

Sharen Arakai
Department of Education
State of Hawaii
3645 Waialae Ave.
Honolulu, HI 96816
PHONE (808) 733-4733
FAX (808) 733-4730
E-MAIL Sharen@kalama.doe.hawaii.edu

Idaho

Dr. Eric S. Hood
Northwestnet
15400 S.E. 30th Place, Ste. 202
Bellevue, WA 98007
PHONE (206) 562-3000
FAX (206) 562-4822

Pat Burns
Westnet
ACNS, Colorado State University
Fort Collins, CO 80530
PHONE (303) 491-7260
E-MAIL PBURNS@WESTNET.NET

Illinois

Peter Roll
Executive Director
Net Illinois
1840 Oak Ave.
Evanston, IL 60201
PHONE (708) 866-1825
E-MAIL p-roll@nwu.edu

Indiana

Ed Tully
Indiana Higher Education
Telecommunication Systems
957 W. Michigan St.
Indianapolis, IN 46202-5184
PHONE (317) 263-8900
FAX (317) 263-8831
E-MAIL tully@ind.net

Iowa

CICnet
ITI Bldg.
2901 Hubbard Dr., Pod G
Ann Arbor, MI 48105
PHONE (313) 998-6103
E-MAIL info@cic.net

Iowa, continued

MIDnet
29 WESC
University of Nebraska
Lincoln, NE 68588
PHONE (402) 472-5032
E-MAIL dmf@westie.unl.edu

Craig Criswell
NetIOWA
P. O. Box 835
2435 Kimberly Rd., #75 S
Bettendorf, IA 52722
PHONE (319) 355-6884
FAX (319) 355-2173
E-MAIL criswell@netiowa.net

Kansas

Jerry Niebaum
Kansas Research and Education Network (KANREN)
Academic Computing Center
University of Kansas
Lawrence, KS 66045

Kentucky

Doyle Friskney
University of Kentucky
201 Administration Bldg.
Lexington, KY 40506
PHONE (606) 257-5600

Louisiana

State Division of Administration Office of Telecommunications Management (OTM)

SURANET

LANET

Maine

Cindy Mitchell
University of Maine System
Computing Center, Neville Hall
Orono, ME 04469-5752
PHONE (207) 581-3501

Maryland

Michael Walsh
Enoch Pratt Library
400 Cathedral St.
Baltimore, MD 21202
PHONE (410) 396-8492
FAX (410) 396-7333
E-MAIL mwalsh@epfl1.epflbalt.org

Glenn Ricart
University of Maryland
College Park, MD 20742
PHONE (301) 405-7700
FAX (301) 314-2210

Massachusetts

Ann von der Lippe
Massachusetts Education Computer Network
75 Arlington St., Rm. 500
Boston, MA 02116
PHONE (617) 727-9500
FAX (617) 727-0778
E-MAIL avdlippe@mecn.mass.edu

Michigan

MERIT, Inc.

Minnesota

Jim Sydow
Technology Information Educational Services (TIES)
W. County Road B-2
Roseville, MN
PHONE (612) 638-8781

Mississippi

None.

Missouri

Dr. Bill Mitchel
MOREnet
1805 E. Walnut
Columbia, MO 65201
PHONE (314) 882-2000
FAX (314) 884-5240
E-MAIL Bill@more.net

Montana

Frank Odasz
Big Sky Telegraph
Western Montana College
710 South Atlantic
Dillon, MT 59725
PHONE (406) 683-7011
E-MAIL frank.odasz@bigsky.dillon.mt.us

Nebraska

Nebraska Division of Communications
Department of Administrative Services
P. O. Box 83111
Lincoln, NE 68501-3111

Sprint Link

Nevada

Lin Forrest
Nevada School Network
400 W. King St., Capitol Complex
Carson City, NV 89710
PHONE (702) 687-3156
FAX (702) 687-5660
E-MAIL lforrest@nsn.scs.unr.edu

New Hampshire

Nearnet

New Jersey

Diane Carroll
Princeton University Plasma Physics Laboratory
P. O. Box 451
Princeton, NJ 08543
PHONE (609) 243-2107

New Mexico

Terry Bolanger
Marianne Granoff
Technet
4100 Osuna N.E., Ste. 103
Albuquerque, NM 87109
PHONE (505) 345-6555
FAX (505) 345-6559
E-MAIL Bolanger@Technet.NM.ORG
Granoff@Technet.NM.ORG

New York

Dennis Martin
NYSERNET
200 Elwood Davis Rd., Ste. 103
Liverpool, NY 13088-6147
PHONE (518) 479-5156
FAX (315) 453-3052
E-MAIL DMARTIN@NYSERNET.ORG

North Carolina

Rick Smith
INTERPATH
711 Hillsborough St.
Raleigh, NC 27609
E-MAIL rsmith@interpath.net

George Schlukbier
NANDOLAND
215 S. McDowell St.
Raleigh, NC 27609
PHONE (919) 829-4500
E-MAIL George@nando.net

North Dakota

Jim Heck
NDIN
600 East Blvd.
Bismarck, ND 58505
PHONE (701) 328-3190
FAX (701) 328-3000
E-MAIL HECK@PIONEER.STATE.ND.US

Ohio

Dan Wintringham
OARNET
1224 Kinnear Rd.
Columbus, OH 43212
PHONE (614) 292-8100
E-MAIL DANW@OAR.NET

Oklahoma

Mike Erhart
ONENET
2500 N. Lincoln Blvd.
Oklahoma City, OK 73105
PHONE (405) 524-9210
E-MAIL mike@phoenix.osrhe.edu

Oregon

NORTHWESTNET

Pennsylvania

Joseph Scorza
Health Sciences Library Consortium (HSLC)
3600 Market St., Ste. 550
Philadelphia, PA 19104-2646
PHONE (215) 222-1532
FAX (215) 222-0416
E-MAIL SCORZA@HSLC.ORG

Rhode Island

NearNet

JvNCNet

South Carolina

Ruth Kirkland
Budget and Control Board
Office of Information Resources
Agency Services, 300 Gervais St.
Columbia, SC 29201
PHONE (803) 737-2298
FAX (803) 734-0327
E-MAIL KIRKLAND@SUNBELT.NET

South Dakota

Technology and Innovations in Education (TIE)
1925 Plaza Blvd.
Rapid City, SD 57702-9357
PHONE (605) 394-1876
FAX (605) 394-5315

Tennessee

State of Tennessee
Department of Finance and Administration
511 Union St., Ste. 1020
Nashville, TN 37243-0288
PHONE (615) 741-3700
FAX (615) 741-6164

Texas

William C. Bard
Texas Higher Education Network
University of Texas Systems
Office of Telecommunication Services
Service Building Rm. 319
Austin, TX 78712-1024
PHONE (512) 471-2449
E-MAIL bard@utexas.edu

Utah

Steve Hess
Utah Education Network
Eccles Broadcast Center
101 Wasatch Dr.
Salt Lake City, UT 84112
PHONE (801) 581-6180
FAX (801) 581-5735
E-MAIL shess@media.utah.edu

Vermont

University of Vermont
Middlebury College
Vermont State College

Vermont Library Systems

NYNEX

Virginia

Al Kincel
Department of Education
101 N. 14th St.
Richmond, VA 23216
PHONE (804) 225-2954
FAX (804) 371-8978
E-MAIL AKINCEL@PEN.K12.VA.US

Washington

Washington School Information Processing Cooperative
2000 200th Pl. S.W.
Lynnwood, WA 98036

West Virginia

Jerry Bryan or Bonnie Lynch
WVNET
837 Chestnut Ridge Rd.
Morgantown, WV 26505
PHONE (304) 293-5192
FAX (304) 293-5540
E-MAIL blynch@access.k12.wv.us

Wisconsin

Michael Dorl
Madison Academic Computing Center
2110 Computer Science and Statistics Bldg.
Madison, WI 53706
PHONE (608) 262-0466
E-MAIL DORL@MACC.WISC.EDU

Wyoming

University of Wyoming

Puerto Rico

Not available.

U.S. Bureau of Indian Affairs

Gene Lott
University of New Mexico
Education Technology Office
Albuquerque, NM 87131
PHONE (505) 277-7310
E-MAIL glott@unm.edu

BEST COPY AVAILABLE

Questionnaire for the State Networking Project

The following information will help us insure that this project addresses the issues most relevant to you. Please answer the following questions and return them to us by fax or e-mail no later than September 30, 1994.

1. Who are the members of your state's Goals 2000 planning committee? Please identify the telecommunications person on that team.
2. How many school districts are in your state?
3. How many school buildings are in your state?
4. What is the number of K-12 teachers?
5. What is the number of K-12 students?
6. How many students are in the largest district? ("Largest" refers to student population.)
7. How many students are in the smallest district? ("Smallest" refers to student population.)
8. How many districts have fewer than 1,000 students?
9. What is the current status of your state's computer networking efforts?
    ___ **a.** Operational
    ___ **b.** Partially Operational
    ___ **c.** Planned
    ___ **d.** Proposed
    ___ **e.** No Current Plans
10. Which information services are provided by your state network? (Indicate all that apply.)
    ___ **a.** Legislative
    ___ **b.** Public Utilities Commission/Public Service Commission
    ___ **c.** State Department of Education
    ___ **d.** Other (Please specify)
11. Does your state currently have a Gopher server or Mosaic home page? If so, what is the Internet address?
12. Do any schools in your state currently have a Gopher server or Mosaic home page? If so, what is the Internet address?
13. Are there community or freenet telecommunications efforts in your state? Does this network collaborate with your State Department of Education?
14. Has a major telecommunications provider established a program in your state to encourage infrastructure building within the state? If so, please explain.
15. Has your state Public Utilities Commission/Public Service Commission established special telecommunications tariffs for education? Is the tariff information available electronically? Where? Please summarize the tariff.
16. Has a long-range plan for telecommunications been incorporated into your state's plans for K-12 education?
17. Has a long-range plan for telecommunications been incorporated into plans for your state at large?

18. Are intermediate educational units (e.g., regional education service centers, BOCES, etc.) available in your state to assist you with training related to telecommunications implementation?
If so, please describe.

19. What funding sources are available to your state for computer networking efforts? (Indicate all that apply.)

___ **a.** Local District
___ **b.** State
___ **c.** Other

20. Who is the person responsible for setting up or directing the computer network for K-12 in your state department of education?

Contact Name:
Organization Name:
Mailing Address:
E-mail Address:
Phone Number:
Fax Number:

21. Who are the major network service providers for K-12 education in your state?

Contact Name:
Organization Name:
Mailing Address:
Internet Address:
Phone Number:
Fax Number:

22. Who are the major Internet service providers for K-12 education in your state?

Contact Name:
Organization Name:
Mailing Address:
Internet Address:
Phone Number:

Each participant, please respond to the barrier questions.

23. Please rate each potential barrier independently in terms of the extent to which it (1) is a problem or (5) is not a problem for your state's telecommunications networking efforts.

___ **a.** Legislative and Regulatory Actions	**1 2 3 4 5**
___ **b.** Technical Infrastructure and Support	**1 2 3 4 5**
___ **c.** Professional Development and Training	**1 2 3 4 5**
___ **d.** Funding: Initial and Long-term	**1 2 3 4 5**
___ **e.** On-line Ethical and Liability Issues	**1 2 3 4 5**
___ **f.** Infusion into Goals 2000 and Educational Development	**1 2 3 4 5**
___ **g.** Developing Private Sector and Community Partners	**1 2 3 4 5**
___ **h.** Educational Systems and Policy Barriers	**1 2 3 4 5**
___ **i.** Other (Please specify)	**1 2 3 4 5**

24. Please describe any networking issues or obstacles related to regional location.

25. Please describe any networking issues or obstacles related to population distribution (urban/suburban/rural).

26. Do you have other concerns about telecommunications that we did not mention? If so, please describe.

SEDL

Southwest Educational
Development Laboratory
211 East Seventh Street
Austin, Texas 78701-3281
(512) 476-6861